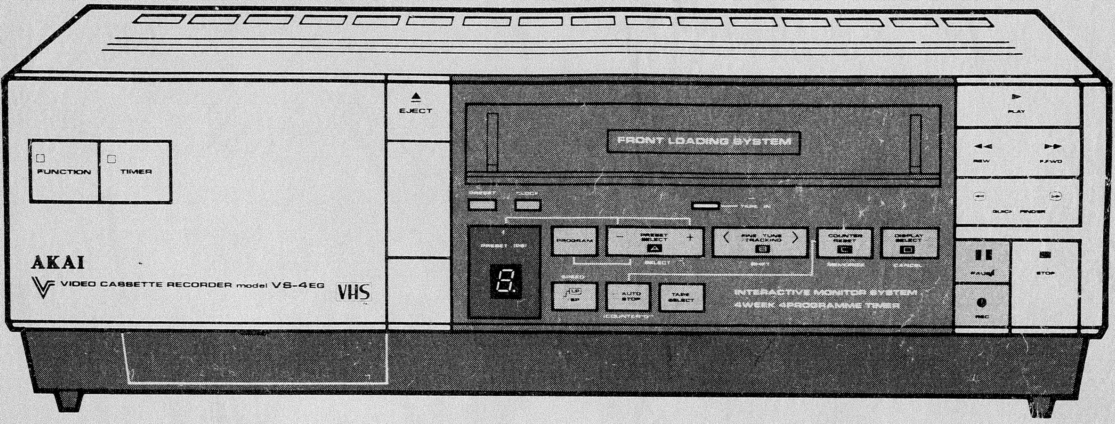
115486

AKAI SERVICE MANUAL

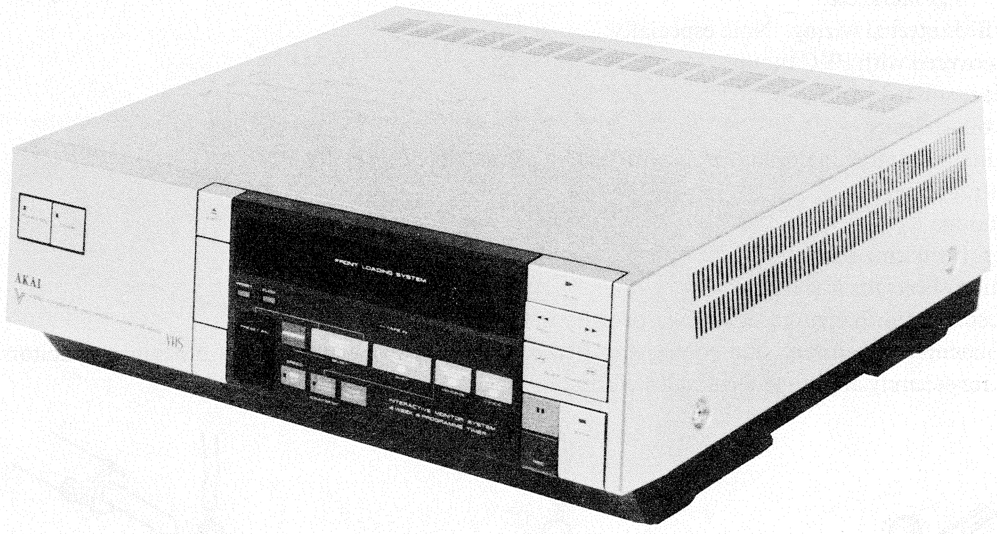

EJECT
FRONT LOADING SYSTEM
FUNCTION
TIMER
AKAI
VIDEO CASSETTE RECORDER model VS-4EG
VHS
PLAY
REW
F.FWD
QUICK FINDER
PROGRAM
PRESET SELECT
SELECT
FINE TUNE TRACKING
COUNTER RESET
DISPLAY SELECT
CANCEL
AUTO STOP
TAPE SELECT
INTERACTIVE MONITOR SYSTEM
4WEEK 4PROGRAMME TIMER
PAUSE
STOP
REC

VIDEO CASSETTE RECORDER

MODEL VS-4 EG/EK/EA/EO/EG-G/EG-M/EO-P

ABBREVIATIONS FOR SERVICE MANUAL
MODEL VS-4EG/EK/EA/EO/EG-G/EG-M/EO-P

ABBREVIATIONS	EXPLANATION
AC	Alternating Current
ACC	Auto Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Auto Frequency Control
AGC	Auto Gain Control
ANT	ANTenna
APC	Auto Phase Control
ASSY	ASSemblY
BAL	BALance
B/C	Buzz and Charactor
BLK	BLacK
BGP	Burst Gate Pulse
B/W	Black and White
CCIR	Comité Consultatif International des Radio Communications
CH (Ch.)	Channel
CM	Capstan Motor
CTL	ConTroL
CUE	Cue
CW	Carrier Wave
DC	Direct Current
DM	Drum Motor
EE	Electronic to Electronic
EQ	EQualizer
Fig.	Figure
FM	Frequency Modulation
Fo	Resonance Frequency
FREQ.	FREQuency
GND	GrouND
H	Horizontal
IC	Integrated Circuit
LED	Light Emitting Diode
LP	Long Play
OSC	OSCillator
PAL	Phase Alternation Line
PB	Play Back
PG	Pulse Generator
Q	Quality factor
REC	RECord
REF-V	REFerence Vertical signal
REV	REView
REW	REWind
RF	Radio Frequency
SECAM	Séquentiel à Memoire
SP	Standard Play
SW	SWitch
SW'NG	SWitchinG
SYNC	SYNChronize
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
V	Vertical
VHF	Very High Frequency
VHS	Video Home System
VIDEO-J	VIDEO Judge
WHT	WHiTe


AKAI
FRONT LOADING SYSTEM
VHS

VIDEO CASSETTE RECORDER

MODEL VS-4 EG/EK/EA/EO/ EG-G/EG-M/EO-P

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SECTION 2 PARTS LIST 49
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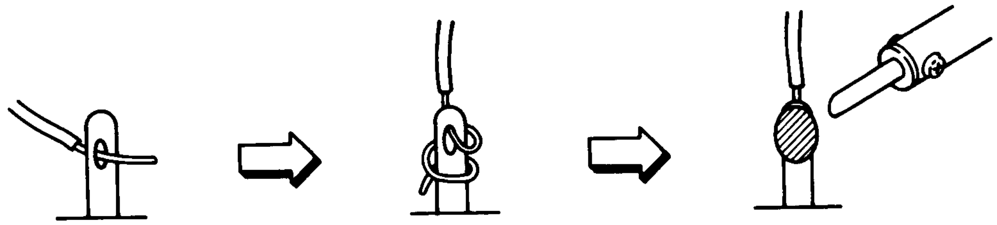
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

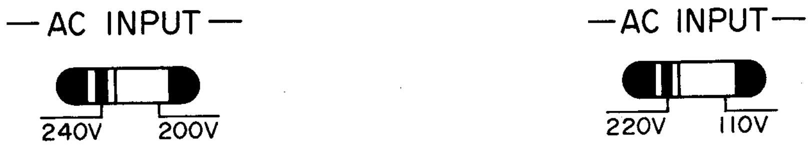
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in out jacks etc.).

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
    Power requirements for electrical equipment differ from area to area.
    The operation voltage of VS-4 is preset to 220V (VS-4EG/EO/EG-G/EG-M) or 240V (VS-4EK/EA).
    Before connecting, check that the AC INPUT selector on the rear panel is set to the voltage for your area:
    220V, 50Hz for Europe except UK
    240V, 50Hz for UK and Australia
    110V, 200V 220V or 240V, 50 or 60Hz for other countries. (If in doubt, consult a qualified electrician.)
    If the AC INPUT is not set for your area:
    1) Confirm that the POWER Switch on the rear panel is set to OFF.
    2) Confirm that the POWER Cord is disconnected.
    3) Move the AC INPUT selector with a screwdriver so that the marker is above the voltage for your area.



VS-4 EA/EK

VS-4 EG/EO/EG-G/EG-M

Fig. 1 Voltage Conversion

SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

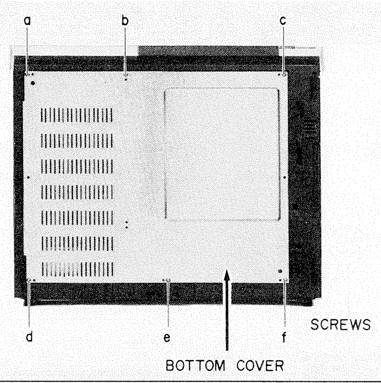
Format		VHS standard
Video recording systme		Rotary, slant azimuth two-head helical scan system.
Recording/Playback time		240 min. with E-240 cassette (SP model)
Tape speed		
SP mode		23.39 mm/sec.
LP mode		11.70 mm/sec.
Quick finder		
SP mode		Approx. 3 times normal speed
LP mode		Approx. 5 times normal speed (Noise bars not fixed)
FF, REW time		Approx. 4 min. with E-180 cassette
RF input	VS-4EG/EG-G/EG-M	PAL, SECAM System B, G VHF Ch E2 – E4, E5 – E12 UHF Ch 21 – 69
	VS-4EA	PAL SECAM, System B, G VHF Ch 0 – 5, 5A, 6 – 11 UHF Ch 21 – 69
	VS-4EK	PAL System I UHF Ch 21 – 69
	VS-4EO	PAL System B, G, H VHF Ch 2 – 4, S1 – S3 M1 – M10, 5 – 12, U1 – U10 UHF 21 – 69
RF output	VS-4EG/EK/EO EG-G/EG-M	System B type modulation HF Ch 30 – 39 adjustable (preset Ch 36)
	VS-4EA	System B type modulation VHF Ch. 3, 4 switchable (preset Ch 4)
Recording (Line input)		PAL, CCIR System B, G, I
Playback (Line output)		PAL, CCIR System B, G, I
Video		
Line input level		0.5 – 2.0 Vp-p/75 ohms, unbalanced
Line output level		1.0 Vp-p/75 ohms, unbalanced
S/N		More than 43 dB
Horizontal resolution		More than 250 lines
Audio		
Line input level		–9 dBs/50 kohms, unbalanced
Line output level		–6 dBs/1 kohms, unbalanced
S/N		More than 40 dB (SP mode)
Frequency response		70 Hz – 8 kHz (SP mode)
Timer		
Programs		4-week one time programs and one shutdown program
Clock reference		Quarts crystal
Display		TV screen (Tape counter, Timer etc.)
Power requirements		110/220V AC, 50/60 Hz (VS-4EG/EO) 200/240V AC 50/60 Hz (VS-4EK/EA)
Operating temperature		5°C – 40°C
Dimensions		440 (W) × 135 (H) × 363 (D) mm (17.3 × 5.3 × 14.3 inches)
Weight		10.5 kg (23.1 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

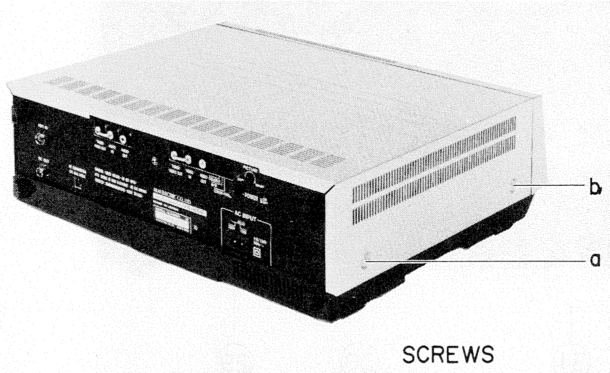
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

1


a
b
c
d
e
f
SCREWS
BOTTOM COVER

2



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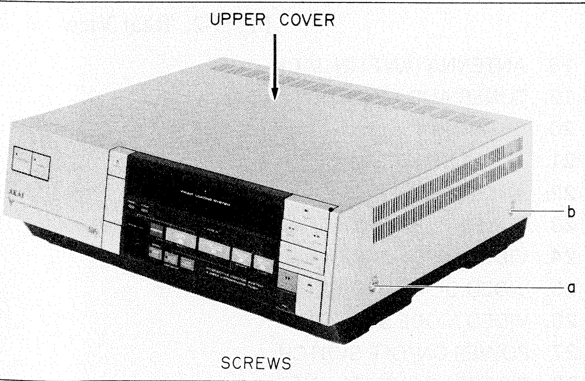
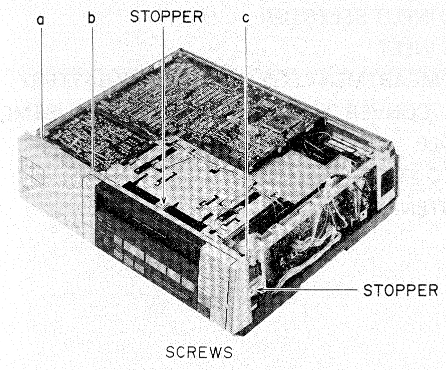
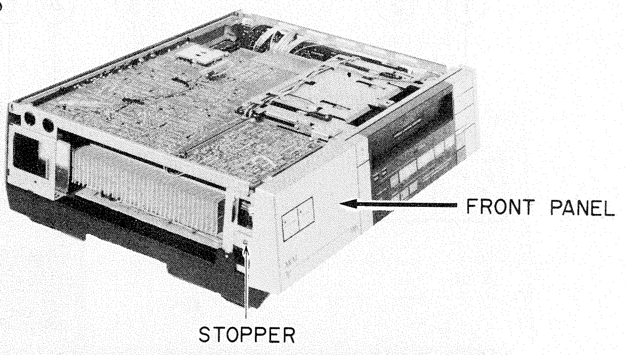

UPPER COVER
b
a
SCREWS

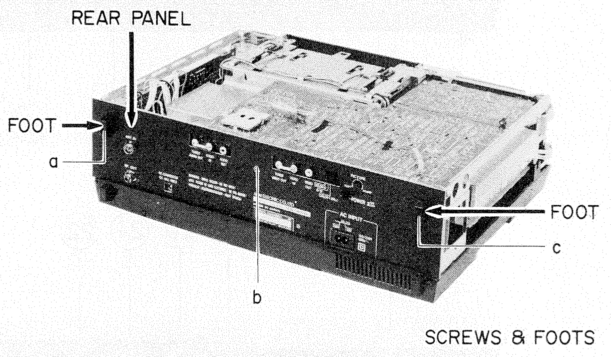
4


a
b
STOPPER
c
STOPPER
SCREWS

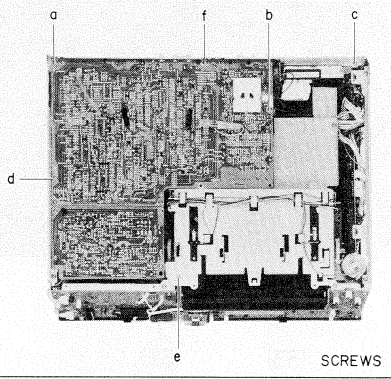
5


FRONT PANEL
STOPPER

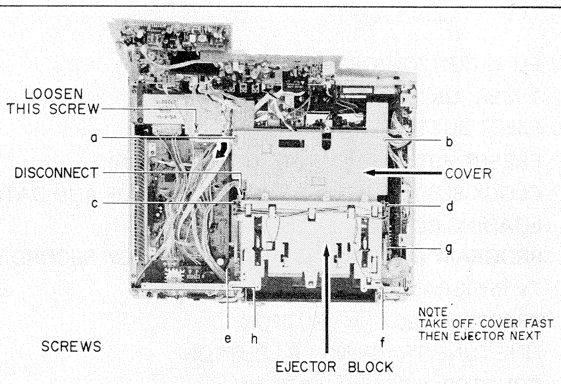
6


REAR PANEL
FOOT
a
FOOT
c
b
SCREWS & FOOTS

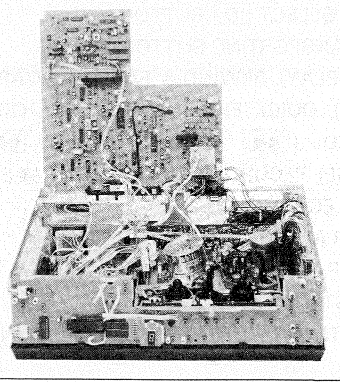
7


a
f
b
c
d
e
SCREWS

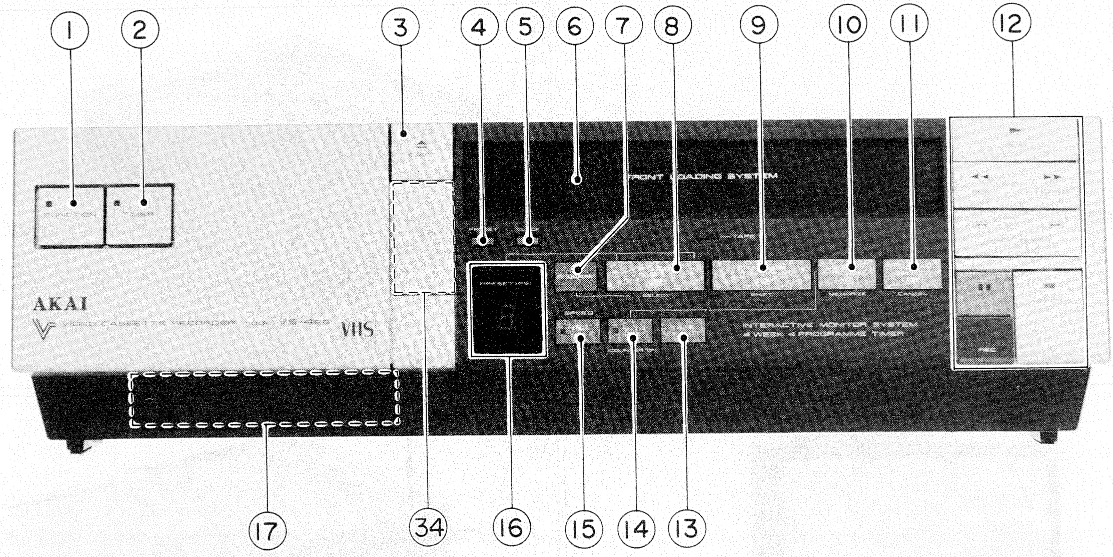
8


LOOSEN THIS SCREW
a
b
DISCONNECT
COVER
c
d
g
NOTE TAKE OFF COVER FAST THEN EJECTOR NEXT
SCREWS
e
h
f
EJECTOR BLOCK

9



III. CONTROLS


1
2
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11
12
AKAI
VIDEO CASSETTE RECORDER model VS-4EG
VHS
FRONT LOADING SYSTEM
INTERACTIVE MONITOR SYSTEM
4 WEEK 4 PROGRAMME TIMER
17
34
16
15
14
13

Fig. 3-1. Front View

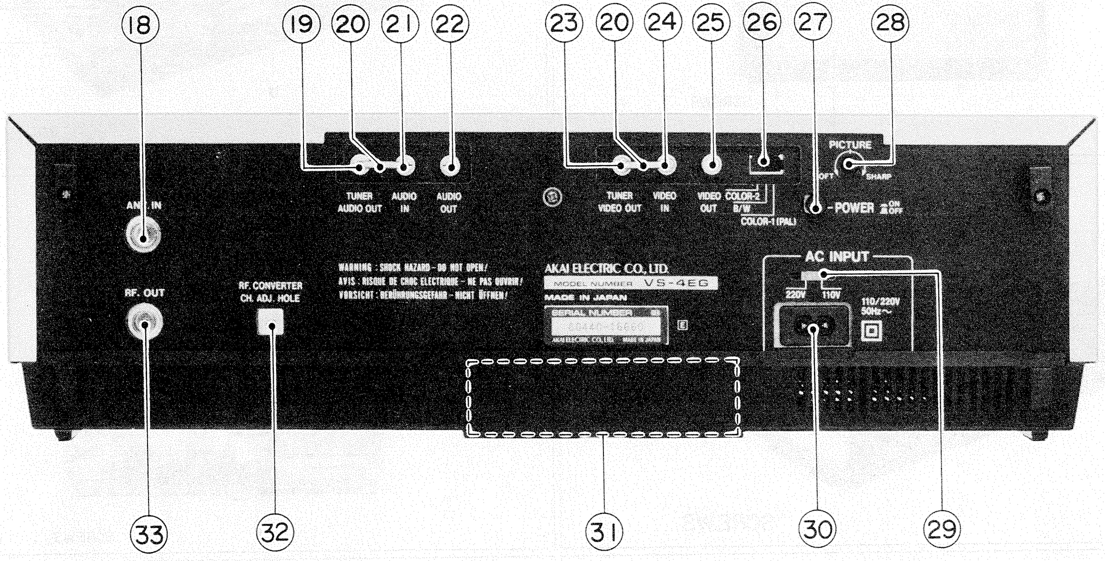

18
19
20
21
22
23
20
24
25
26
27
28
ANT. IN
RF. OUT
RF. CONVERTER CH. ADJ. HOLE
TUNER AUDIO OUT
AUDIO IN
AUDIO OUT
TUNER VIDEO OUT
VIDEO IN
VIDEO OUT
COLOR-2
B/W
COLOR-1 (PAL)
PICTURE
SOFT
SHARP
POWER ON OFF
AC INPUT
220V
110V
110/220V 50Hz~
AKAI ELECTRIC CO., LTD.
MODEL NUMBER VS-4EG
MADE IN JAPAN
SERIAL NUMBER
33
32
31
30
29

Fig. 3-2. Rear View

1. FUNCTION "ON/OFF" BUTTON
2. TIMER "ON/OFF" BUTTON
3. EJECT BUTTON
4. PRESET BUTTON (TO TUNE IN TV STATION)
5. CLOCK BUTTON (TO SET THE ACTUAL TIME AND DATE)
6. LOADING COVER
7. PROGRAM BUTTON (TO AUTOMATICALLY RECORD A TV PROGRAM)
8. PRESET SELECT [A] BUTTON
9. FINE TUNE/TRACKING [B] BUTTON
10. COUNTER RESET [C] BUTTON
11. DISPLAY SELECT [D] BUTTON
12. TAPE TRANSPORTING BUTTON PLAY (▶ PLAY), REWIND & FAST FORWARD (◀◀ REW, ▶▶ FWD), QUICK FINDER REVERSE & QUICK FINDER FORWARD ([◀◀] QUICK FINDER [▶▶]), PAUSE (❚❚ PAUSE), RECORDING (● REC), STOP (■ STOP)
13. TAPE SELECT BUTTON
14. COUNTER AUTO ("O") STOP BUTTON
15. SPEED (SP/LP) SELECT BUTTON
16. PRESET STATION DISPLAY
17. COMPARTMENT FOR THE REMOTE-CONTROL UNIT (RC-R4)
18. ANTENNA (ANT.) IN JACK
19. TUNER AUDIO OUTPUT JACK
20. SHORT PIN
21. AUDIO INPUT JACK
22. AUDIO OUTPUT JACK
23. TUNER VIDEO OUTPUT JACK
24. VIDEO INPUT JACK
25. VIDEO OUTPUT JACK
26. VIDEO MODE SELECTOR
27. POWER ON/OFF SWITCH
28. PICTURE CONTROL KNOB
29. AC INPUT SELECTOR
30. AC INLET
31. COMPARTMENT FOR THE BACK UP BATTERY
32. RF CONVERTER CHANNEL (CH.) ADJUSTMENT (ADJ.) HOLE
33. RF OUT JACK
34. ANTENNA SWITCH (EA MODEL ONLY)

IV. PRINCIPAL PARTS LOCATION

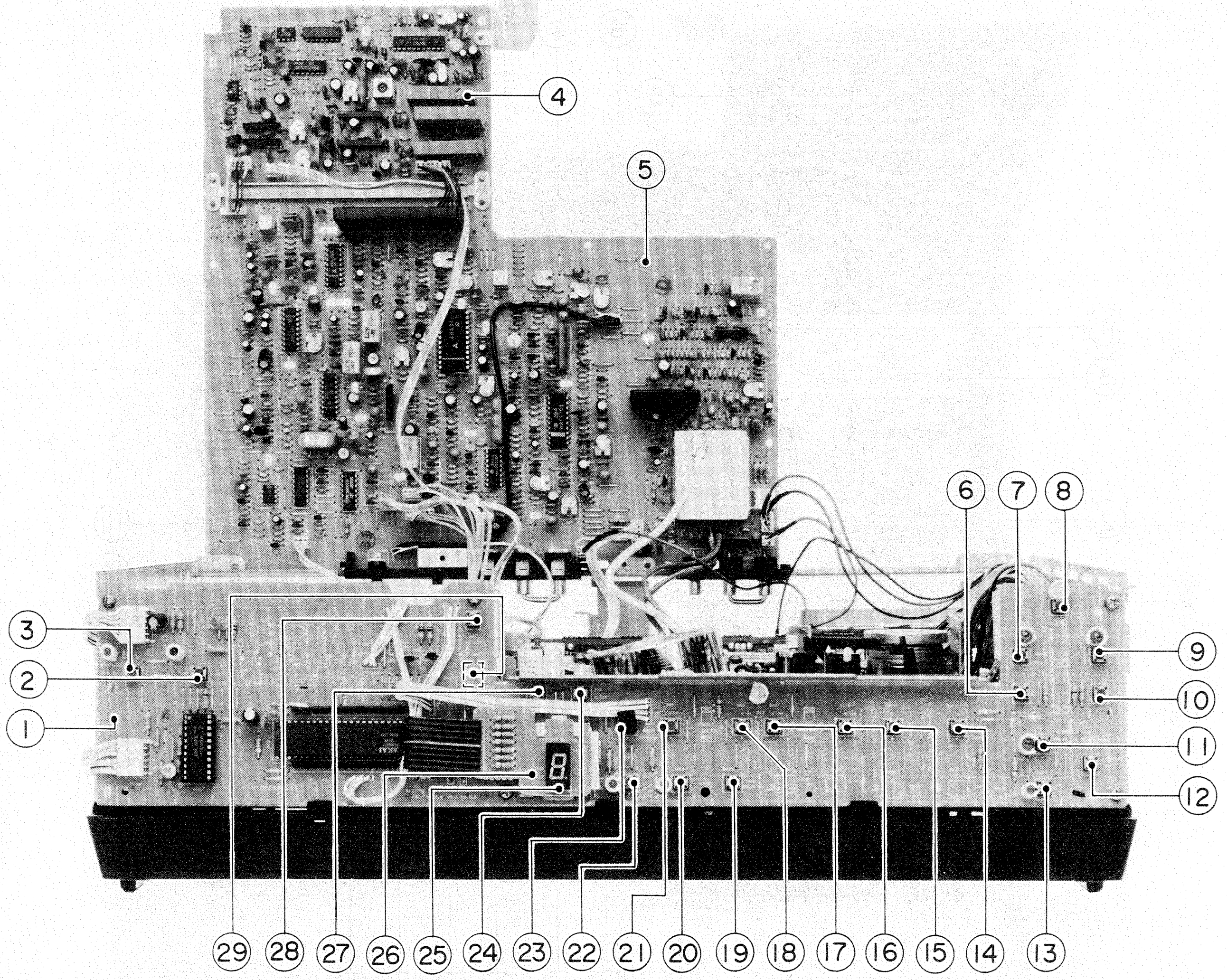


Fig. 4-1. Parts Location (Front View)

1. OPERATION P.C BOARD V1015A505A
2. TIMER "ON/OFF" SWITCH SW2
3. FUNCTION "ON/OFF" SWITCH SW1
4. SKEW JUMP PC BOARD V1017A5120
5. VIDEO PC BOARD V1017A5040
6. QUICK FINDER REVERSE SWITCH SW16
7. REWIND SWITCH SW14
8. PLAY SWITCH SW13
9. FAST FORWARD SWITCH SW15
10. QUICK FINDER FORWARD SWITCH SW17
11. PAUSE/STILL SWITCH SW18
12. STOP SWITCH SW20
13. REC SWITCH SW19
14. DISPLAY CHANGE SWITCH SW12
15. COUNTER RESET SWITCH SW11
16. FINE/TRACKING ⊞ SWITCH SW10
17. FINE/TRACKING ⊟ SWITCH SW9
18. PRESET SELECT ⊞ SWITCH SW8
19. TAPE SELECT SWITCH SW23
20. AUTO "O" STOP SWITCH SW22
21. PRESET SELECT ⊟ SWITCH SW7
22. SPEED (SP/LP) SELECT SWITCH SW21
23. PROGRAM SWITCH SW6
24. CLOCK SET SWITCH SW5
25. PRESET STATION INDICATOR DISPLAY V1015A505B (EG, EK, EA, EG-G, EG-M MODEL)
26. LED PC BOARD V1015A505C (EO MODEL)
27. PRESET SWITCH SW4
28. EJECT SWITCH SW3
29. ANTENNA SWITCH SW28 (EA MODEL ONLY)

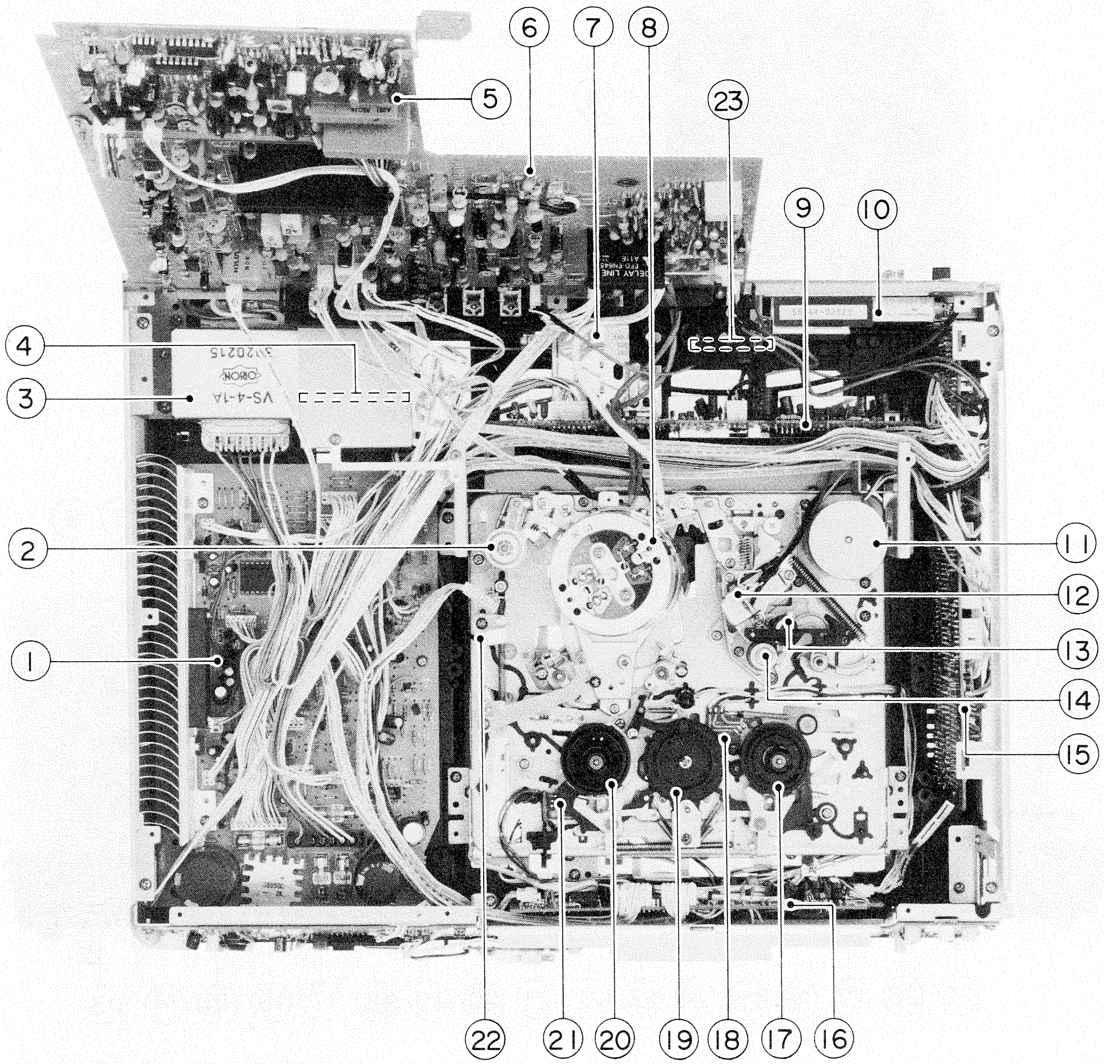
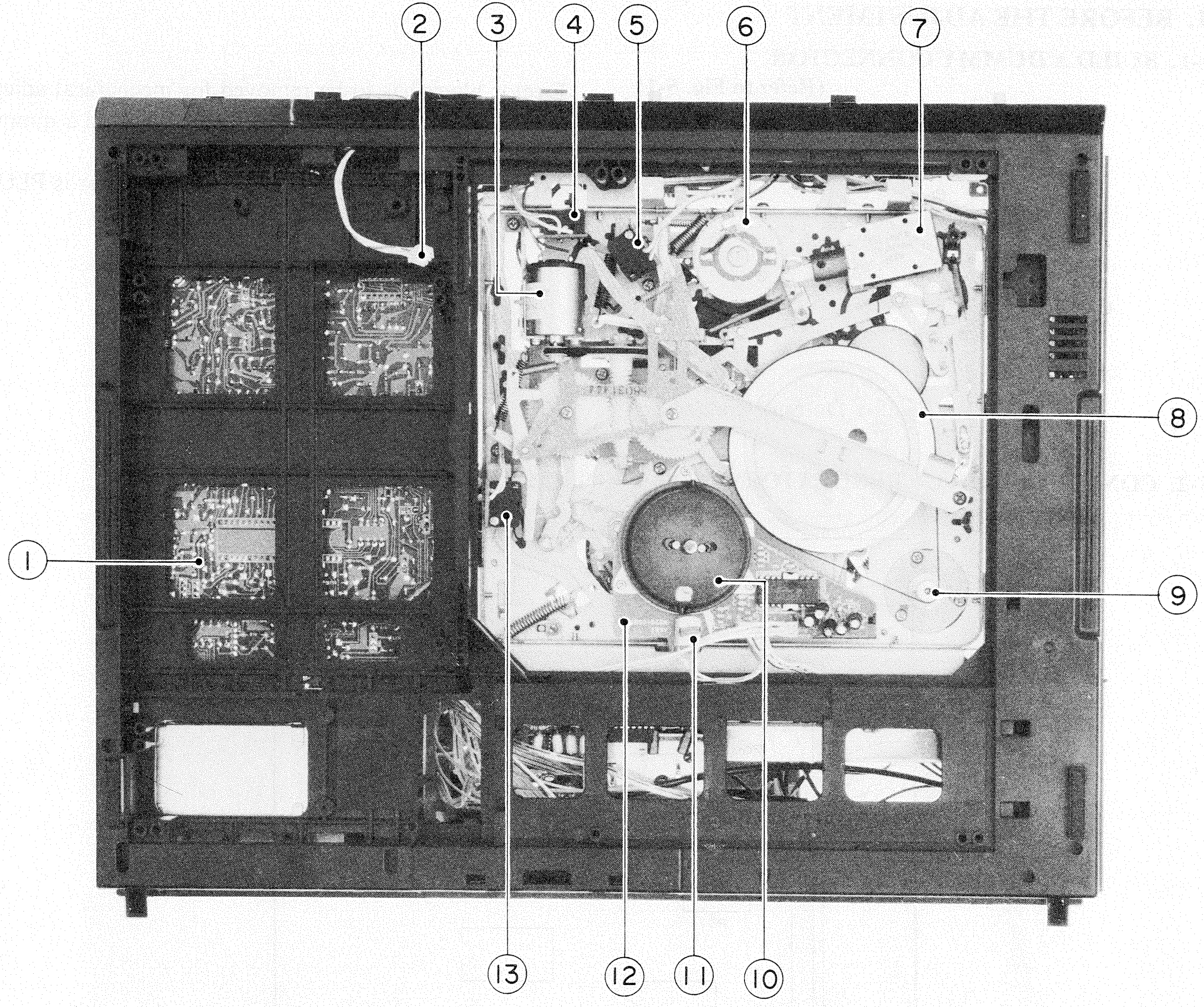


Fig. 4-2. Parts Location (Top View)

1. POWER SUPPLY & SYSTEM CONTROL P.C BOARD V1017A503
2. IMPEDANCE ROLLER
3. POWER TRANSFORMER
4. POWER FILTER PC BOARD V1017D5060
5. SKEW JUMP P.C BOARD V1017A5120
6. VIDEO P.C BOARD V1017A5040
7. TV TUNER UNIT.
8. DRUM HEAD BLOCK
9. DEMODULATOR P.C BOARD 6B00159A
10. RF MODULATOR BLOCK
11. CAPSTAN MOTOR
12. AUDIO/CONTROL HEAD
13. PINCH ROLLER
14. CAPSTAN
15. SERVO & AUDIO P.C BOARD V1017A5010
16. MECHA DRIVE PC BOARD V1015A502A
17. TAKE UP REEL
18. HALL I.C (R) P.C BOARD 5070
19. IDLER ASSY.
20. SUPPLY REEL
21. HALL I.C (L) P.C BOARD 5080
22. FULL ERASE HEAD
23. ANTENNA SWITCH P.C BOARD (V1015A505D) (EA model only)


2
3
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1
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13
12
11
10

Fig. 4-3. Parts Location (Botton View)

1. POWER SUPPLY & SYSTEM CONTROL
   P.C BOARD V1017A5030
2. CONNECTOR FOR REMOTE CONTROL UNIT (RC-R4)
3. LOADING MOTOR
4. RECORD SAFETY SWITCH
5. LOADING SWITCH B
6. REEL DRIVE MOTOR
7. PLUNGER
8. CAPSTAN FLYWHEEL
9. CAPSTAN MOTOR
10. DRUM MOTOR
11. DRUM MOTOR PG HEAD
12. DRIVE P.C BOARD M3201C5010
13. LOADING SWITCH A

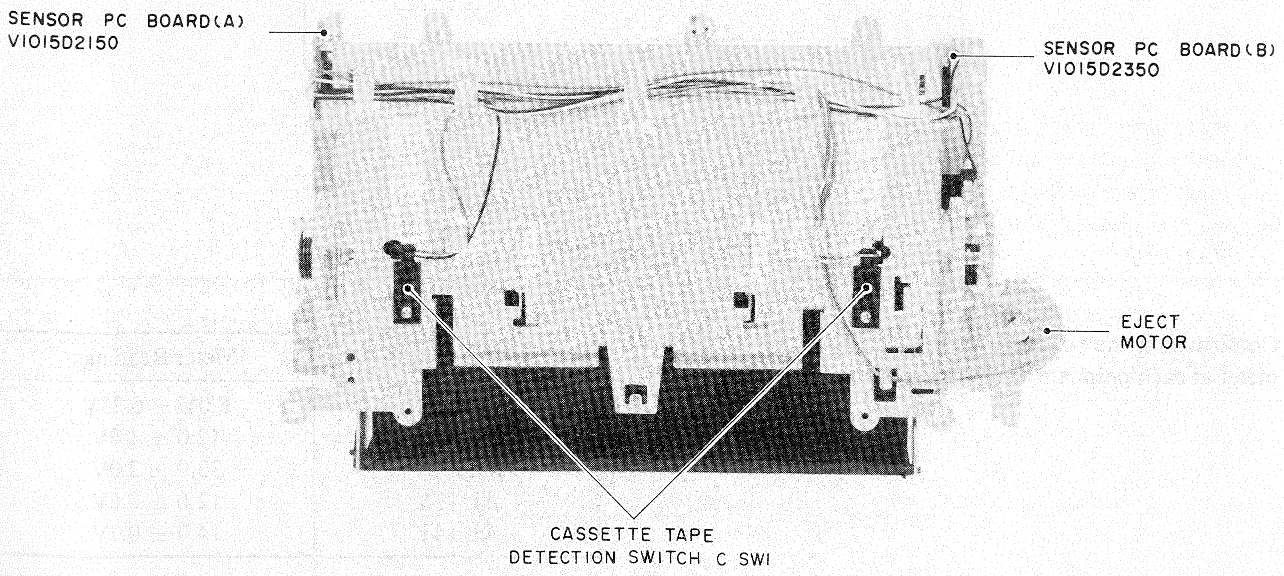

SENSOR PC BOARD(A)
V1015D2150
SENSOR PC BOARD(B)
V1015D2350
EJECT
MOTOR
CASSETTE TAPE
DETECTION SWITCH C SW1

Fig. 4-4. Parts Location (Ejector Block part)

V. MECHANICAL ADJUSTMENT

5-1. BEFORE THE ADJUSTMENT

5-1-1. BUILD A DUMMY CONNECTOR

(Refer to Fig. 5-1)

Ejector block has to be removed for mechanical adjustments. Consequently, it is necessary to build a dummy connector as shown in Fig. 5-1.
The connector used for this dummy connector is PLUG 8P Connector. (Parts Number EJ-318263)

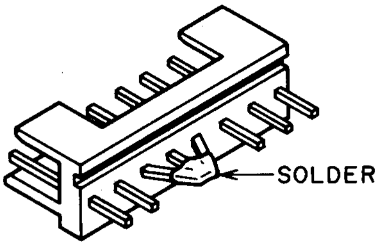


Fig. 5-1 Dummy Connector

5-1-2. CONFIRMATION OF REGULATOR OUTPUT VOLTAGE. (Refer to Fig. 5-2 and chart 5-1)

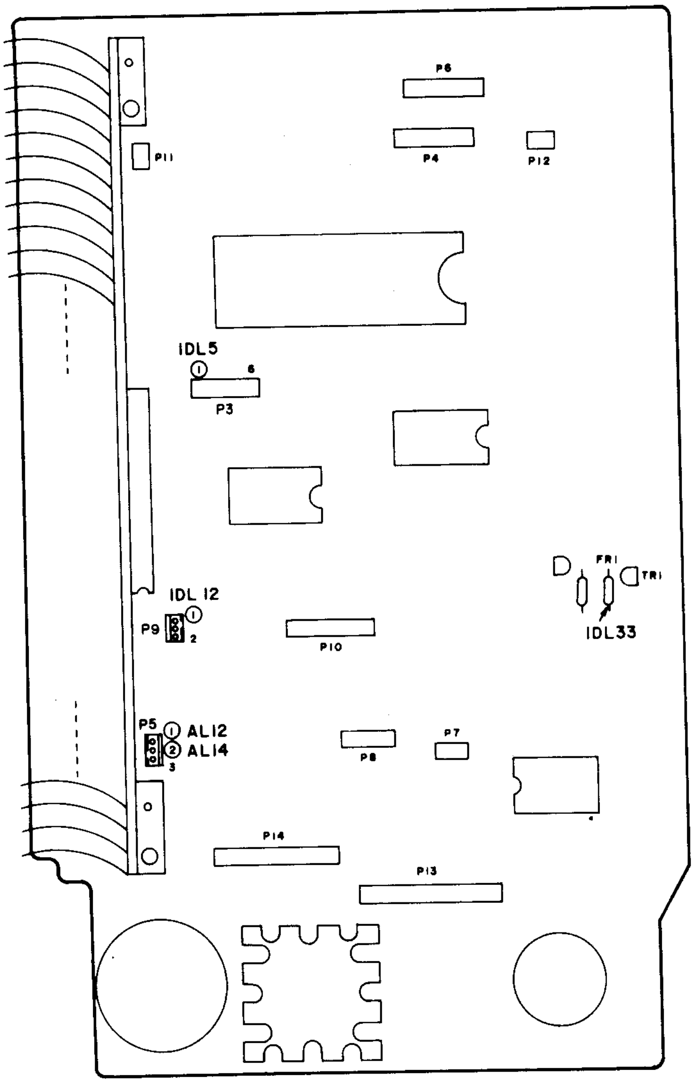

P6
P11
P4
P12
IDL5
1
6
P3
FR1
TR1
IDL 12
1
P9
2
P10
IDL33
P5
1 AL12
2 AL14
3
P7
P8
P14
P13

Fig. 5-2 Top View of Power & Syscon P.C Board

Confirm that the voltages measured by digital DC voltmeter at each point are as indicated in chart 5-1.

Check Points	Meter Readings
IDL 5V	5.0V ± 0.25V
IDL 12V	12.0 ± 1.0V
IDL 33V	33.0 ± 2.0V
AL 12V	12.0 ± 0.6V
AL 14V	14.0 ± 0.7V

Chart 5-1

5-2. TENSION LEVER POSITION ADJUSTMENT (Refer to Fig. 5-3)

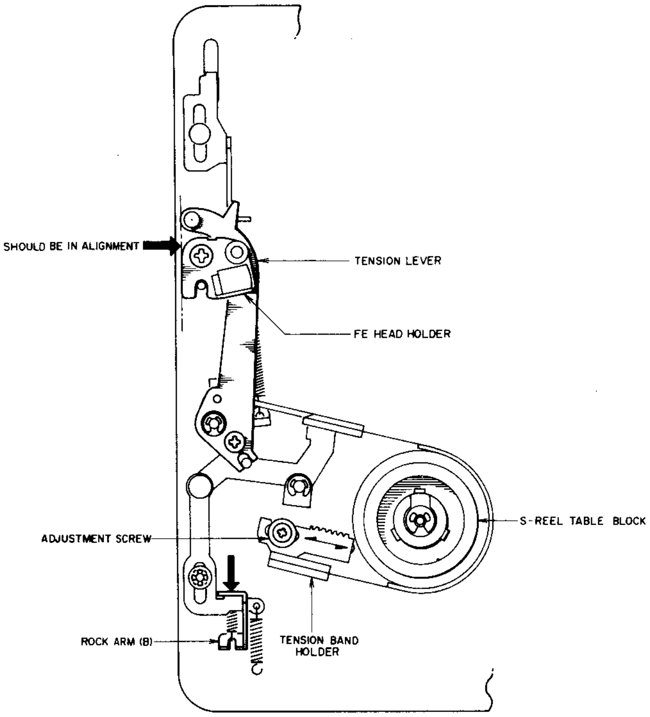

SHOULD BE IN ALIGNMENT
TENSION LEVER
FE HEAD HOLDER
S-REEL TABLE BLOCK
ADJUSTMENT SCREW
ROCK ARM (B)
TENSION BAND HOLDER

Fig. 5-3

1) Remove the EJECTOR BLOCK from Mech. chassis.
2) Disconnect the 8P connector from EJECTOR BLK and connect a Dummy plug instead of the EJECTOR BLOCK which built at Section 5-1-1.
3) Achieve PLAY mode, and switch "OFF" the power switch on the rear panel and maintain the loading position.
4) Loosen the adjustment screw and adjust the tension band holder so that the tension lever and FE head holder are in alignment as shown in Fig. 5-3, and tighten the adjustment screw.
5) After adjustment, paint-lock the adjustment screw.

5-3. BACK TENSION ADJUSTMENT (Refer to Figs. 5-4, 5-5)

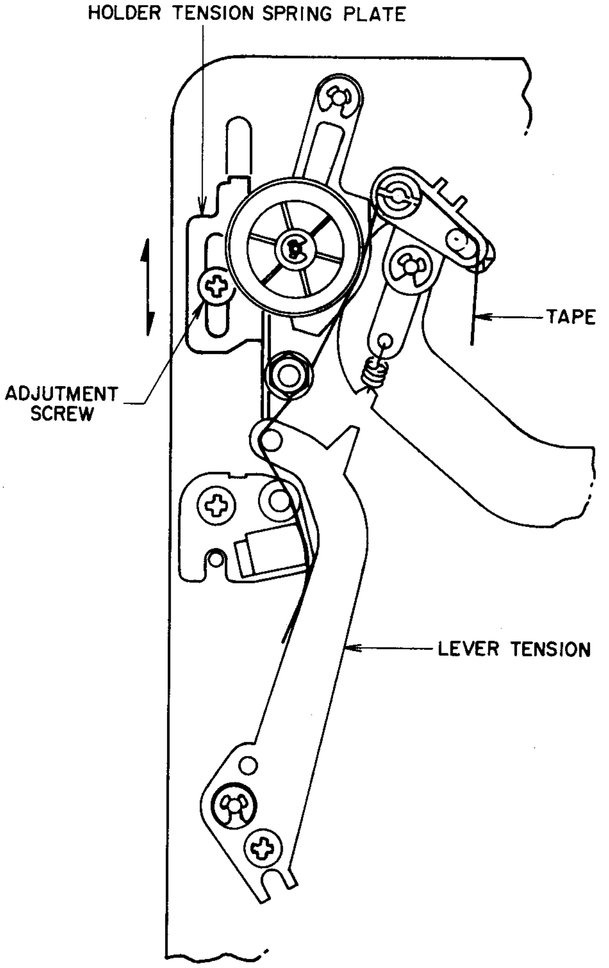

HOLDER TENSION SPRING PLATE
TAPE
ADJUTMENT SCREW
LEVER TENSION

Fig. 5-4

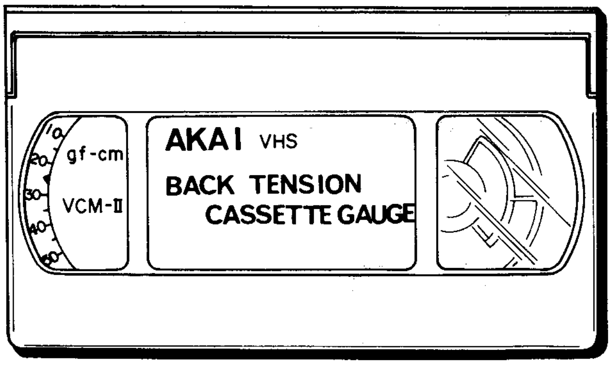

10
20
30
40
50
gf-cm
VCM-II
AKAI VHS
BACK TENSION
CASSETTE GAUGE

Fig. 5-5 Back Tension Jig. (AJ-751181)

1) Set the back tension Jig (AJ-751181) as shown in Fig. 5-5, and put the some weight on the back tention Jig..
2) Achieve PLAY mode.
3) Loosen the adjustment screw shown in Fig. 5-4, adjust the holder tension spring plate so that back tension will be 20 gf-cm, and tighten the adjustment screw.
4) After adjustment, paint-lock the adjustment screw.

VI. REPLACEMENT OF VIDEO HEAD ASSEMBLY

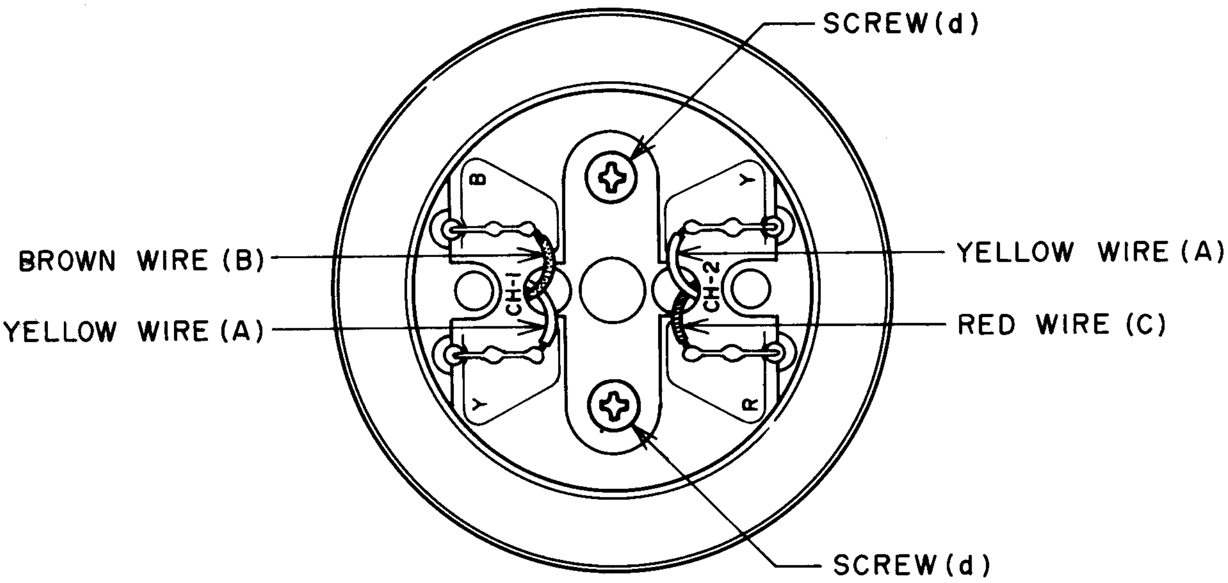

SCREW(d)
BROWN WIRE (B)
YELLOW WIRE (A)
YELLOW WIRE (A)
RED WIRE (C)
SCREW(d)
CH-1
CH-2
B
Y
Y
R

Fig. 6-1

1) UNSOLDER THE WIRE (A), THEN UNSOLDER THE BROWN WIRE (B) AND RED WIRE (C).
2) REMOVE THE TWO SCREWS (d), THEN PULL UP THE UPPER DRUM ASSEMBLY.
3) INSTALL THE NEW HEAD ASSEMBLY AND SOLDER THE WIRES AS SHOWN IN FIG. 6-1.
4) FASTEN TWO SCREWS (d).
5) AFTER REPLACEMENT, THE FOLLOWING ADJUSTMENTS ARE NECESSARY.

a) PB Tracking Adjustment (Servo & Audio P.C Board Step 4)
b) PB Switching Point Adjustment (Servo P.C Board Step 5)
c) REC Switching Point Adjustment (Servo P.C Board Step 6)
d) Video Head Q (Quality factor) and resonance Adjustment (Video P.C Board Step 12 & 13)
e) PB Y Level Adjustment (Video P.C Board Step 15)
f) PB Chroma Level Adjustment (Video P.C Board Step 18)

VII. TAPE TRANSPORT ADJUSTMENT

7-1. TAPE GUIDE (R) ADJUSTMENT (Refer to Fig. 7-1)

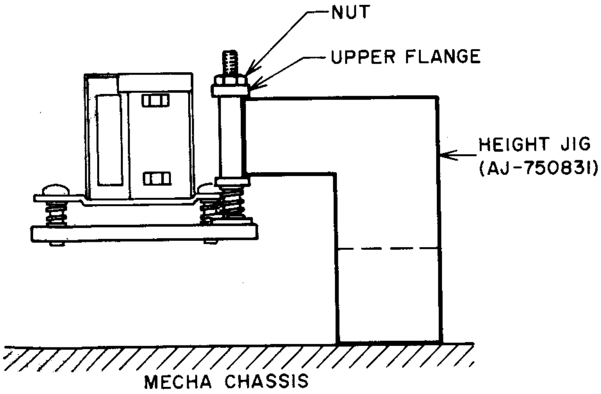

NUT
UPPER FLANGE
HEIGHT JIG (AJ-750831)
MECHA CHASSIS

Fig. 7-1

1) Remove the Guide cap.
2) Set the height Jig (AJ-750831) on the Mecha. chassis as shown in Fig. 7-1 and check the height of the lower face of the upper flange.
If necessary, carefully adjust by turning the nut.

7-2. SUPPLY TAPE GUIDE (L) ADJUSTMENT (Refer to Fig. 7-2)

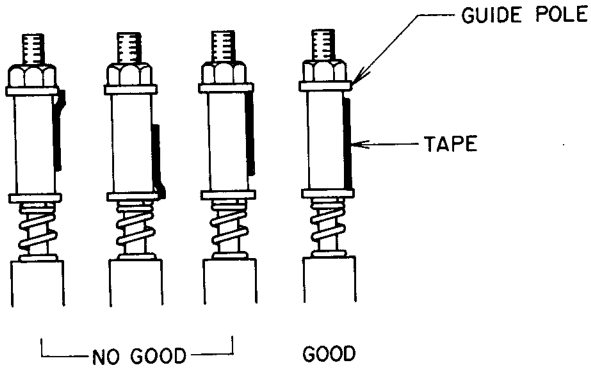

GUIDE POLE
TAPE
NO GOOD
GOOD

Fig. 7-2

1) Set the cassette tape and achieve PLAY mode.
2) Make adjustment with the supply guide height adjustment nut, so that the lower part of the tape will pass the lower part of the guide pole without curling as shown in Fig. 7-2.

7-3. GUIDE ROLLER HEIGHT ADJUSTMENT (Refer to Fig. 7-3 to Fig. 7-6)

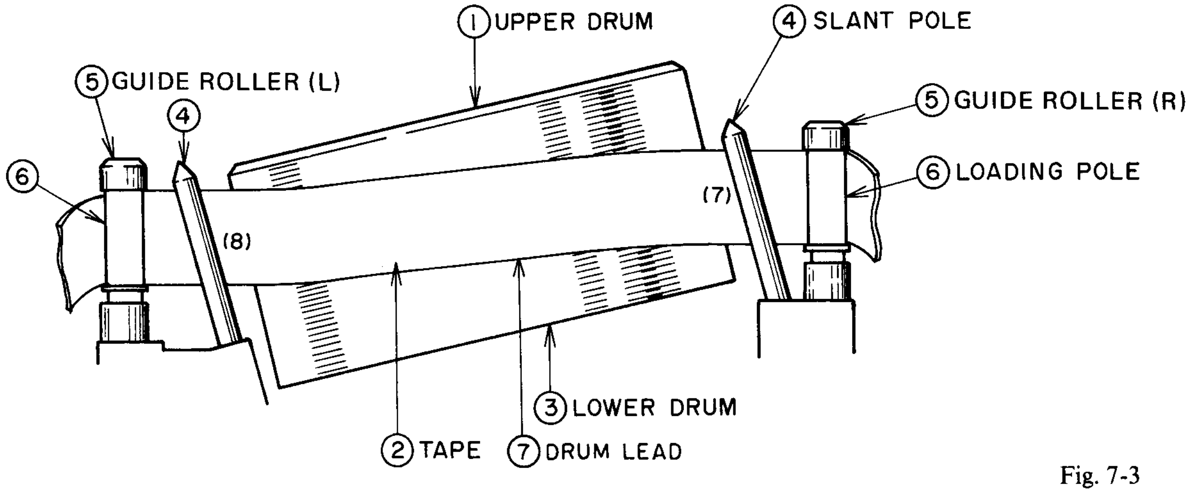
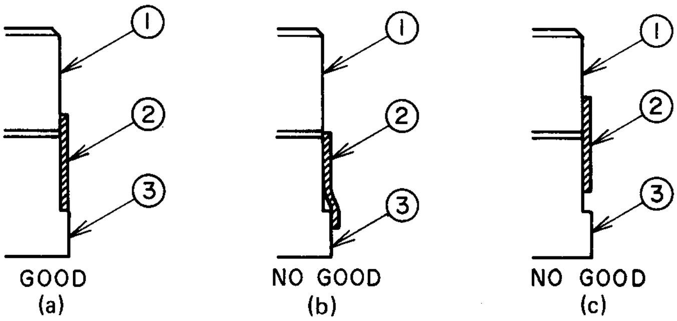

① UPPER DRUM
④ SLANT POLE
⑤ GUIDE ROLLER (L)
④
⑥
⑤ GUIDE ROLLER (R)
⑥ LOADING POLE
(7)
(8)
③ LOWER DRUM
② TAPE
⑦ DRUM LEAD

Fig. 7-3



GOOD
(a)

NO GOOD
(b)

NO GOOD
(c)

Fig. 7-4

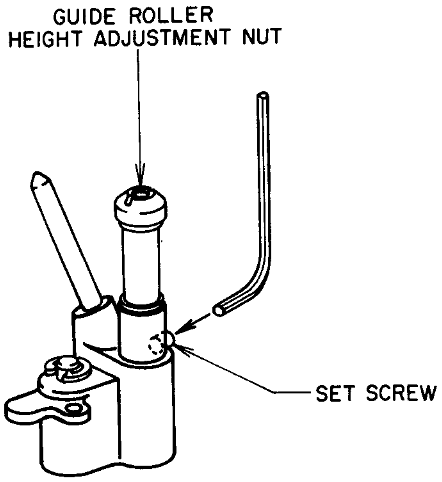

GUIDE ROLLER
HEIGHT ADJUSTMENT NUT
SET SCREW

Fig. 7-6

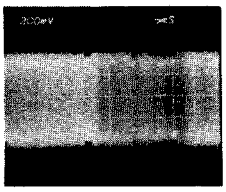


Fig. 7-5

1) Slightly loosen the set screw at the lower part of the guide roller so that the guide roller can be adjusted with reasonable tightness (See Fig. 7-6)
2) Connect an oscilloscope to TR7 (FM envelope out) of the VIDEO P.C Board.
3) Set the reference tape (AT-750795) and achieve PLAY mode.
4) Ensuring it that the oscilloscope shows such a waveform as shown in Fig. 7-5 and also watching the point (7) of Fig. 7-3, adjust the height of the guide roller (R) so that the tape runs without curling as shown in Fig. 7-4 (a).
5) Similarly, adjust the height of the guide roller (L) watching the waveform on the oscilloscope and the point (8) of Fig. 7-3.
6) Make sure that there is no shaking in the picture of the monitor TV.
7) Fix the guide roller with the set screw.

7-4. AUDIO/CONTROL HEAD HEIGHT, TILT AND AZIMUTH ADJUSTMENT

(Refer to Fig. 7-7 to Fig. 7-9)

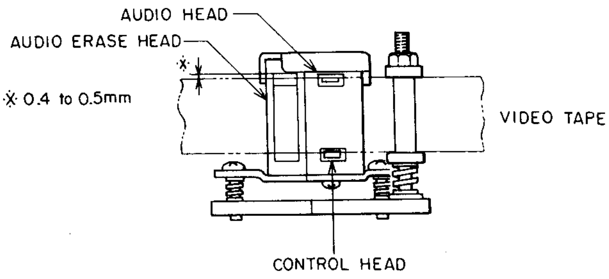

AUDIO HEAD
AUDIO ERASE HEAD
※
※ 0.4 to 0.5mm
VIDEO TAPE
CONTROL HEAD

Fig. 7-7

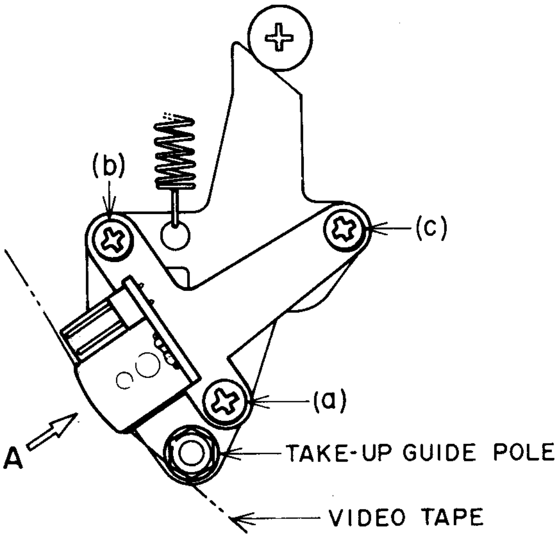

(b)
(c)
(a)
A
TAKE-UP GUIDE POLE
VIDEO TAPE

Fig. 7-8

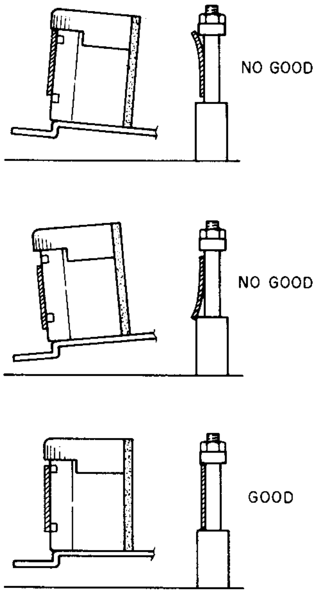

NO GOOD
NO GOOD
GOOD

Fig. 7-9

1) Connect an AC Volt Meter to Audio Out.
2) Playback the reference tape (AT-750795).
3) Turn screw (a), (b) and (c) in order slightly but by exactly the same amount. Adjust the audio output level to its maximum. Take screw (a) as your standard and use screw (b) for azimuth adjustment. Adjust screw (c) until there is no tape wrinkle in the guide pole section, the audio output level is at maximum and there is the minimum possible level flucuation.
   Then raise and lower screw (a) very slightly and adjust (b) and (c), and set to the point for maximum output.

Notes: Repeat the adjustment of tape guide height, guide roller height and audio/CTL several times in order to achieve the perfect tape running.

7-5. CONTROL HEAD POSITION ADJUSTMENT (Refer to Fig. 7-10)

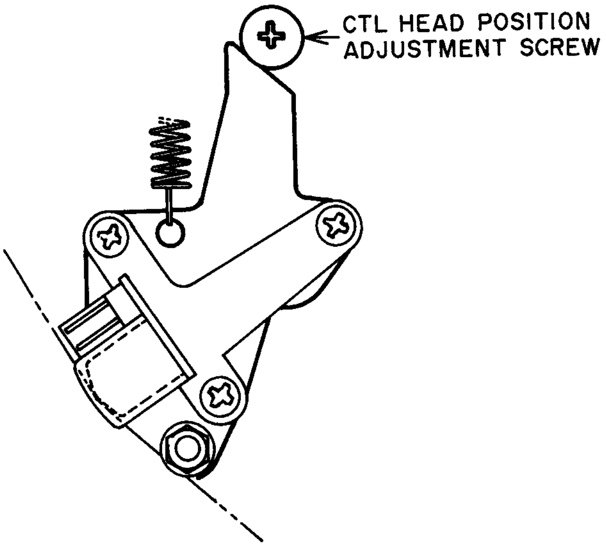


Fig. 7-10

1) Connect an oscilloscope to TR7 (pre-out) of the Video P.C Board.
2) Set the reference tape (AT-750795) and initiate the play mode.
3) While watching the waveform on the oscilloscope, all so watching the monitor screen and push the TRACKING Button on the front panel.
   Confirm the tracking marker in which direction the maximum point of the waveform is located from the center position.
4) Turn back the tracking maker to the center position, and carry out the following (a) or (b) adjustment.
   (a) If the maximum point of the waveform is reached by moving the tracing marker to Left side from the center position, turn the adjustment screw counter-clockwise and make adjustment to maximum point.
   (b) If the maximum point of the waveform is reached by moving tracking marker to Right side from the center position, turn the adjustment screw clockwise and make adjustment to maximum point.

Note: Make these adjustments only after the tape running is competely adjusted.

7-6. ADJUSTMENT OF QUICK FINDER (REVIEW) RUN (Refer to Figs. 7-11, 7-12)

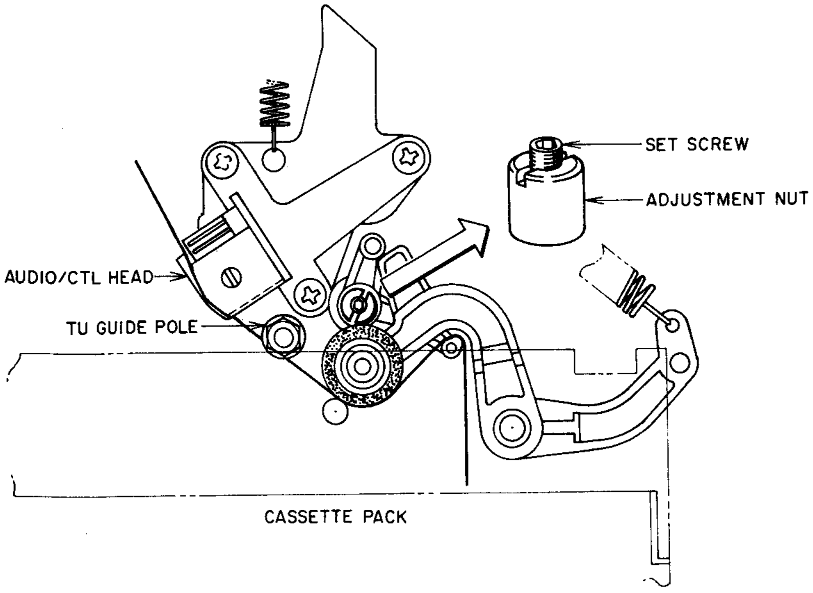


Fig. 7-11

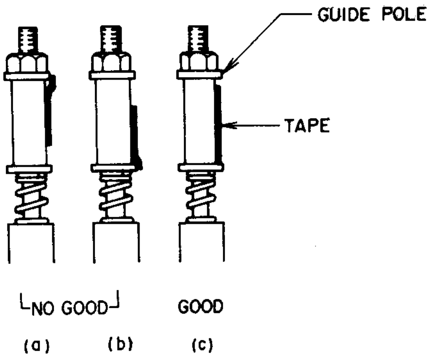


Fig. 7-12

1) Set the recording and playback tape E-240 and wind it up.
2) Press the REVIEW button to initiate the REVIEW mode.
3) Loosen the set screw in Fig. 7-11 so that the adjustment nut can be turned.
4) While watching the tape running on the take-up guide pole, turn the adjustment screw slowly so as to eliminate the curling of the tape (Fig. 7-12 (C)).
5) Tighten the set screw and fix the adjustment screw.
6) After the completion of adjustment, press the stop button once, and after unloading the tape, recheck the review run.

Note: If the adjustment nut is turned too fast, some deviation may be found after adjustment because the tape running does not follow such a fast pace.

VIII. ELECTRICAL ADJUSTMENT

8-1. SERVO ADJUSTMENT

SERVO PCB
TEST POINT (TP-1)

PIN NO.	CHECK ITEM
①	DM PG
②	REF-V
③	SW'NG PULSE
④	COLOR PHASE
⑤	DM SPEED
⑥	CTL
⑦	CM SPEED
⑧	GND

Chart 8-1.

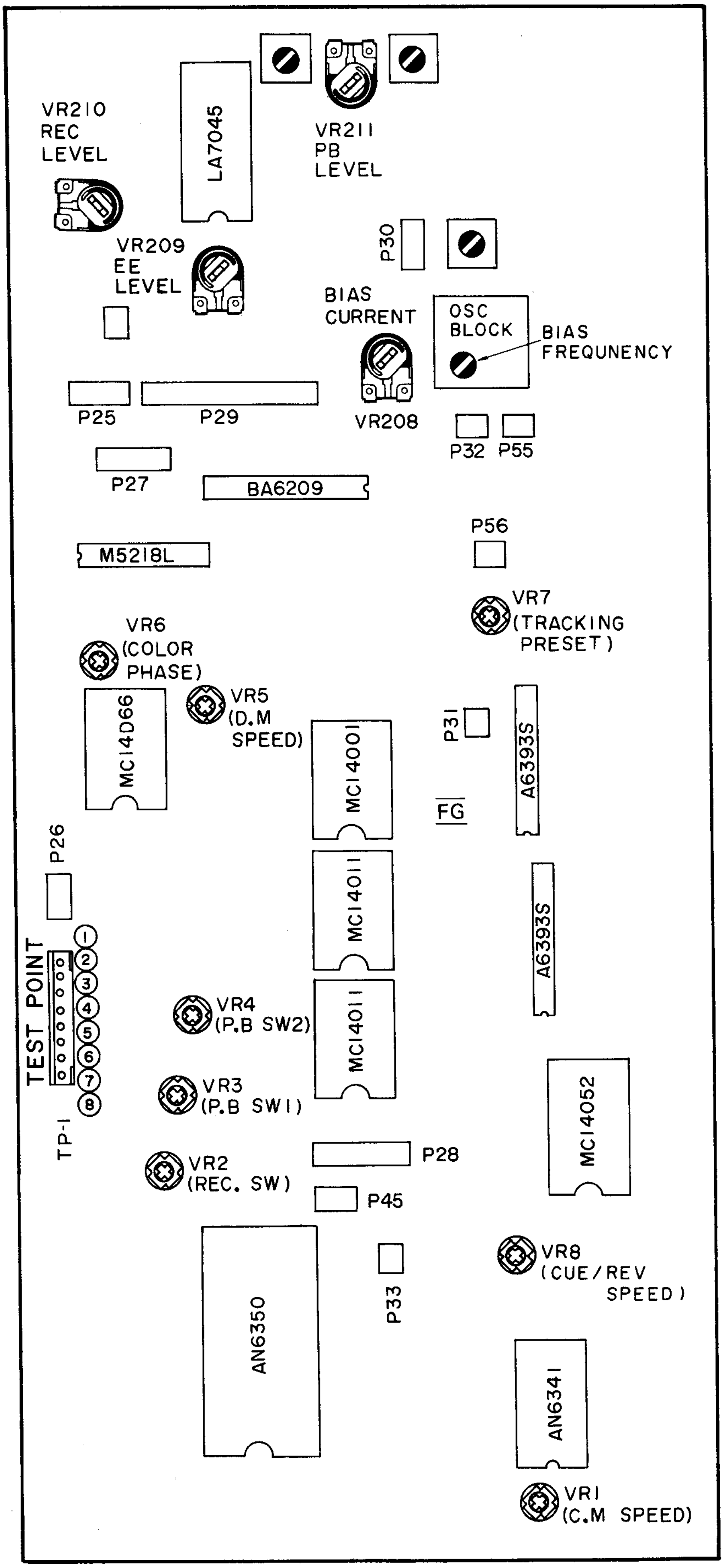
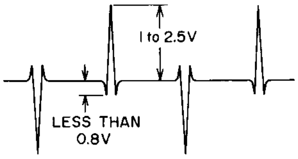
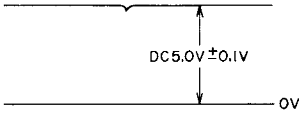
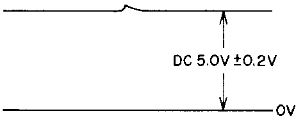
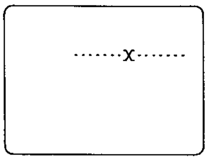
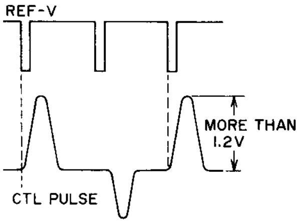
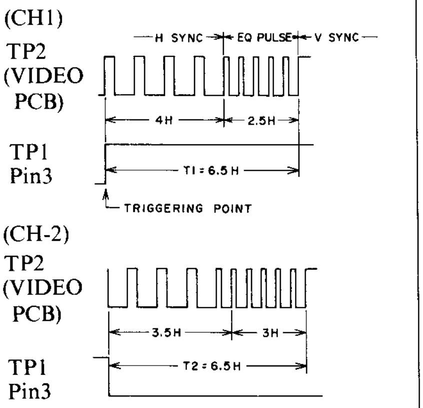
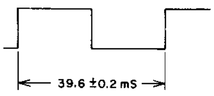
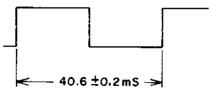
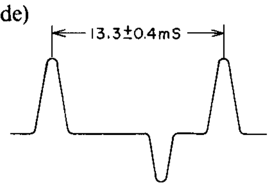
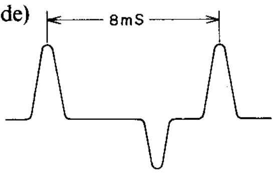
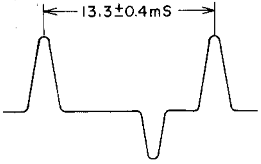
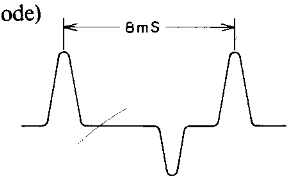

VR210
REC
LEVEL
LA7045
VR211
PB
LEVEL
VR209
EE
LEVEL
P30
BIAS
CURRENT
OSC
BLOCK
BIAS
FREQUNENCY
P25
P29
VR208
P32
P55
P27
BA6209
P56
M5218L
VR7
(TRACKING
PRESET)
VR6
(COLOR
PHASE)
VR5
(D.M
SPEED)
MC14D66
MC14001
P31
A6393S
FG
P26
MC14011
A6393S
TEST POINT
TP-1
①
②
③
④
⑤
⑥
⑦
⑧
VR4
(P.B SW2)
MC14011
VR3
(P.B SW1)
MC14052
VR2
(REC. SW)
P28
P45
AN6350
P33
VR8
(CUE/REV
SPEED)
AN6341
VR1
(C.M SPEED)

Fig. 8-1 Servo and Audio P.C Board Adjustment points

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Drum Motor PG level	Reference Tape (AT-750795)	PB	TP1 (Pin①)	Confirmation	 Confirm the PG waveform is within the levels shown above.
2	Drum Motor Normal speed	Reference Tape (AT-750759)	PB	TP1 (Pin⑤)	VR5	 Adjust so that the Drum Servo phase error voltage is within DC 5.0V ± 0.1V
3	Capstan Motor Normal speed	Reference Tape (AT-750795)	PB	TP1 (Pin⑦)	VR1	 Adjust so that the capstan servo phase error voltage is within DC 5.0V ± 0.2V
4	Tracking Preset	Reference Tape (AT-750795)	PB	TP1 (Pin②) (Pin⑥)	VR7	 Tracking marker "X" on monitor screen is set to the center of the dotted line by pressing the TRACKING BUTTON on the Front Panel.  Adjust so that the start-down waveform portion of REF-V (Servo standard signal) is lined up with the phase of CTL pulse. At this time, Confirm CTL pulse level is more than 1.2V

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
5	Switching Point	Reference Tape (AT-750795)	PB	TP2 (Video PCB) TP1 (Pin③)	VR3 VR4	 (CH1) TP2 (VIDEO PCB) H SYNC EQ PULSE V SYNC 4H 2.5H TP1 Pin3 T1 = 6.5 H TRIGGERING POINT (CH-2) TP2 (VIDEO PCB) 3.5H 3H TP1 Pin3 T2 = 6.5 H Adjust T1 with VR3 to 6.5H and T2 with VR4 The difference between T1 and T2 should be within 0.3H.
6	REC Switching Point	Color Bar from Color Bar Generator	REC	TP2 (Video PCB) TP1 (Pin③)	VR2	Adjust T1 and T2 waveforms to 6.5H ± 0.3H. As the same manner in step 5.
7	Color phase	Reference Tape (AT-750795)	PB Cue & Review (Quick Finder)	TP1 (Pin③)	VR6	Cue (Quick Finder) mode  1 At the cue mode, adjust VR6 so that the switching pulse waveform is as shown above. Review (Quick Finder) mode  2 Change to review mode, confirm that the switching pulse waveform is whithin 40.6 ± 0.2ms as shown above. 3 Confirm that color convergence is not appeared around the center (Green and magenta) of the Color Bar on the monitor screen.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
8	Capstan motor speed at Cue & Review (Quick Finder) Mode	Reference Tape (AT-750795)	Cue (Quick Finder)	TP1 (Pin⑥)	VR8	(SP mode)  (LP mode)  1 Adjust VR8 so that the CTL pulse waveform is as shown above.
			Review (Quick Finder)	TP1 (Pin⑥)	Confirmation	(SP mode)  (LP mode)  1 Confirm that the CTL waveform is as shown above.

8-2. AUDIO ADJUSTMENT

(For adjustment points refer to Fig. 7-1)

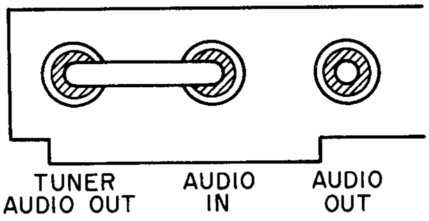


Fig. 8-2. Audio Jack

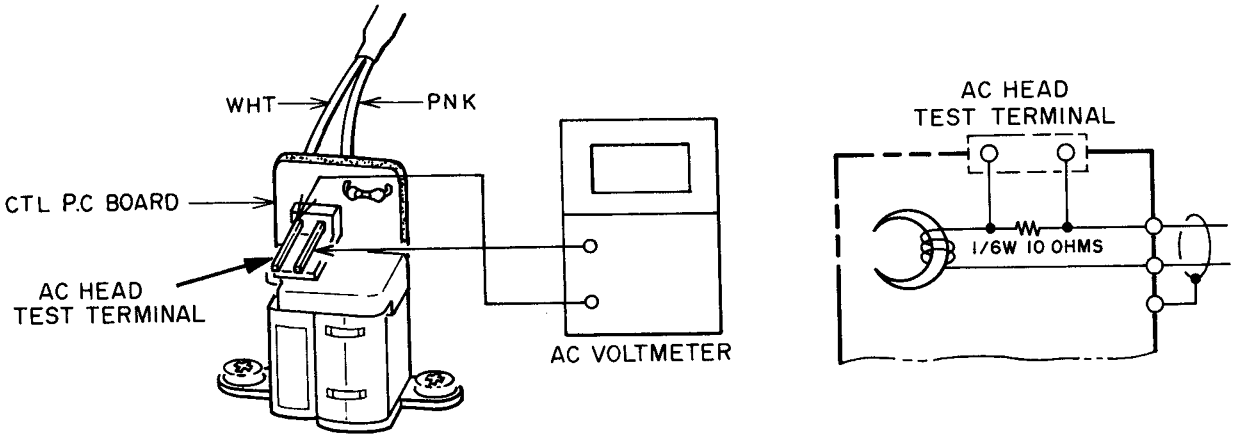


Fig. 8-3. Audio Test Terminal

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	PB level	Test Tape (AT-750800)	P.B	Audio Output	VR211	−6.0 ± 1.0 dBm
2	PB Distortion Factor	Test Tape (AT-750800)	P.B	Audio Output	Confirmation	Less than 2.0 %
3	A/C Head Azimuth	Reference Tape (AT-750795)	P.B	Audio Output	AC Head Adjustment Screw	$-7.0^{+2.0}_{-4.0}$ dBm
4	EE level	Audio Input 1 kHz, −9dBm	EE	Audio Output	VR209	−6.0 ± 1.0 dBm
5	Bias OSC Frequency	No signal Input	REC	A/C Head Terminals (see Fig. 8-3)	OSC Block	1 Connect a Frequency counter to the Erase head terminals 2 Adjust the core of OSC Block, so that the Frequency counter reads 70.0 ± 1.0 kHz
6	Bias voltage	No signal Input	REC	A/C Head Terminals (see Fig. 8-3)	VR208	Connect a AC volt meter to A/C Head terminals AC 3.4 ± 0.2mV
7	REC level	No signal Input	REC	A/C Head Terminals (see Fig. 8-3)	VR210	1 Connect the OSC Block Pin⑧to GND. (stop the oscillation) 2 Connect a AC volt meter to A/C Head Terminals SP mode AC 0.22 ± 0.01mV LP mode AC 0.25 ± 0.02mV
8	Bias lead	No signal Input	REC	Audio Output	FL202	Minimum output level

Note : For adjustment points refer to Fig. 7-1.

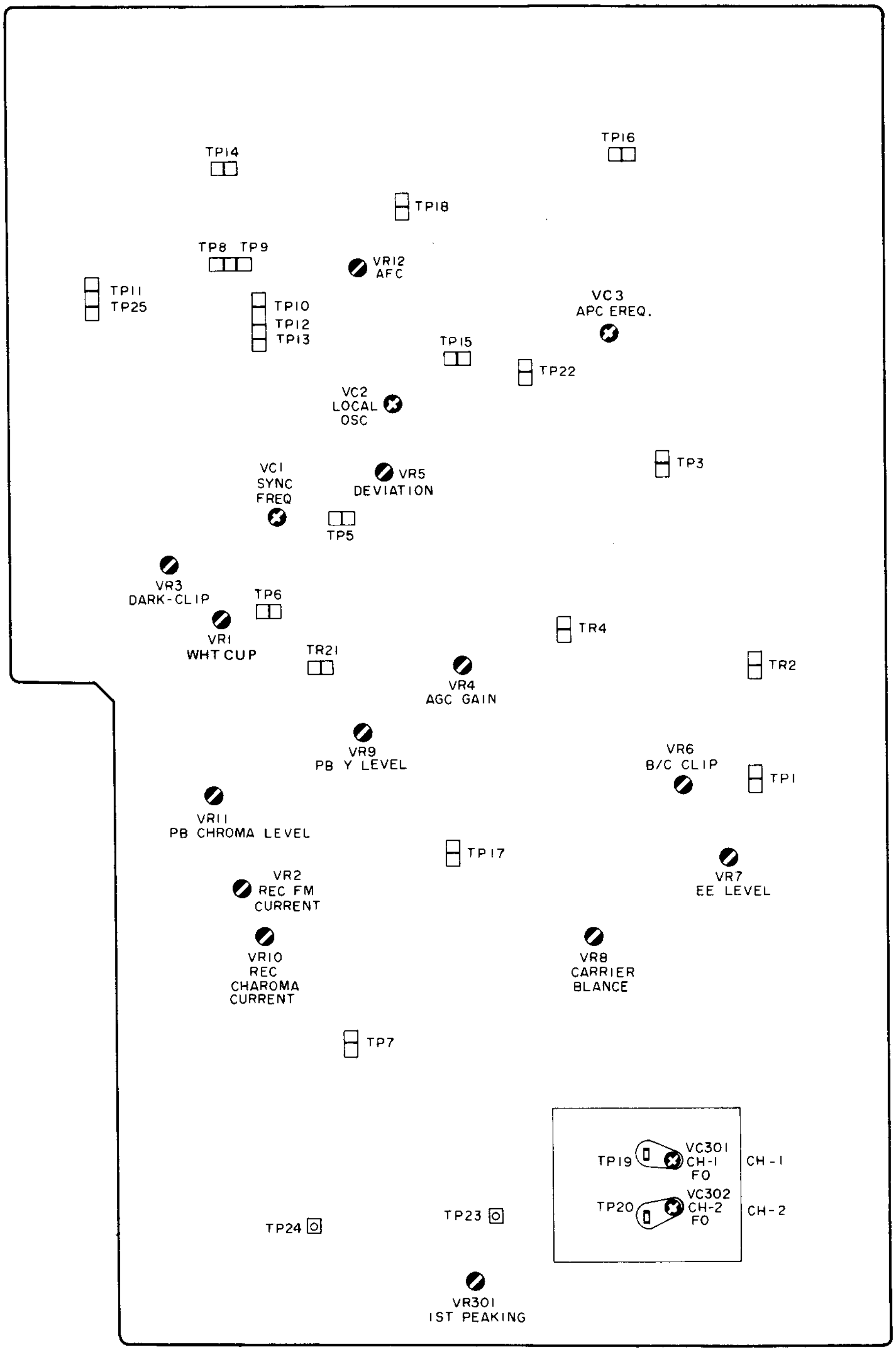
8-3. VIDEO ADJUSTMENT

No.	CHECK ITEM
TP1	VIDEO IN
TP2	VIDEO OUT
TP3	RF OUT
TP4	REC VIDEO
TP5	AGC GAIN
TP6	PRE EMPHASIS
TP7	REC OUT
TP8	PB ACC IN
TP9	ACC OUT

No.	CHECK ITEM
TP10	5.06 MHz (APC)
TP11	PB AMP OUT
TP12	BGP.
TP13	GATED BURST
TP14	AFC
TP15	LOCAL OSC
TP16	VIDEO J
TP17	CARRIER BAL.
TP18	CW OUT

No.	CHECK ITEM
TP19	CH-1 REC CURRENT
TP20	CH-2 REC CURRENT
TP21	FM OSC OUT
TP22	APC FREQUENCY
TP23	1st PEAKING
TP24	LIMITER BAL.
TP25	SKEW JUMP OUT

Chart 8-2 VIDEO P.C Board Test Points



TP14
TP16
TP18
TP8 TP9
VR12 AFC
TP11
TP25
TP10
TP12
TP13
VC3 APC EREQ.
TP15
TP22
VC2 LOCAL OSC
TP3
VC1 SYNC FREQ
VR5 DEVIATION
TP5
VR3 DARK-CLIP
TP6
VR1 WHT CUP
TR21
TR4
TR2
VR4 AGC GAIN
VR9 PB Y LEVEL
VR6 B/C CLIP
TP1
VR11 PB CHROMA LEVEL
TP17
VR2 REC FM CURRENT
VR7 EE LEVEL
VR10 REC CHAROMA CURRENT
VR8 CARRIER BLANCE
TP7
TP19
VC301 CH-1 FO
CH-1
TP20
VC302 CH-2 FO
CH-2
TP24
TP23
VR301 IST PEAKING

(VIEW FROM PATTEN SIDE)

Fig. 8-4 Video P.C Board Adjustment Points

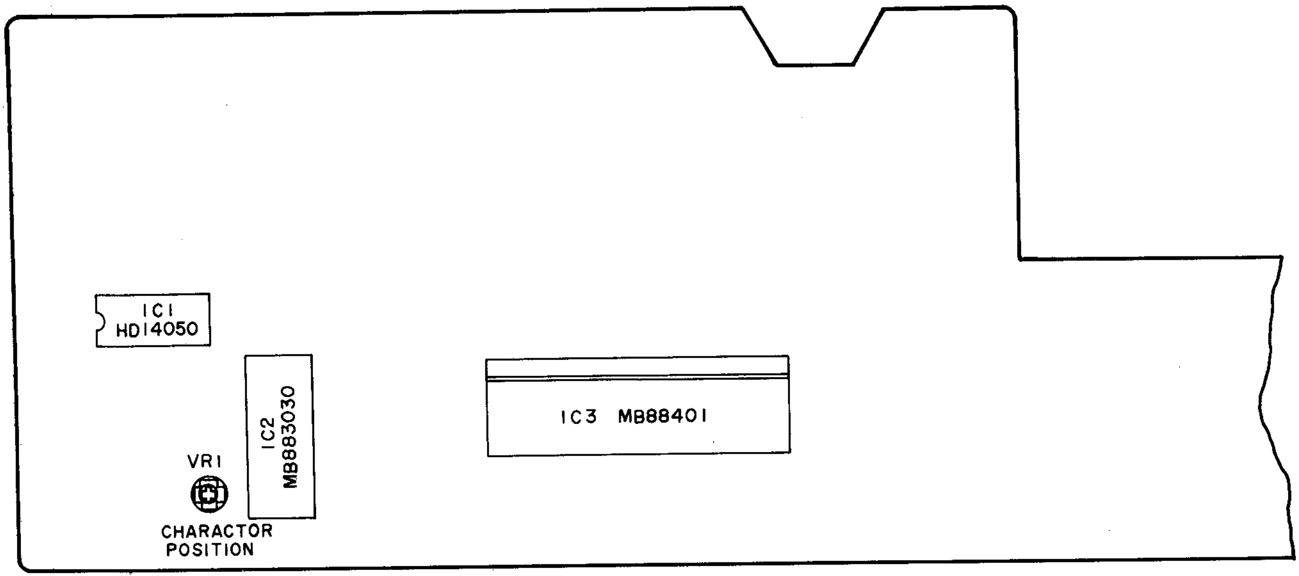
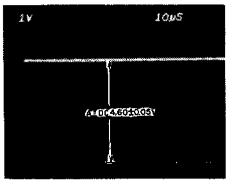
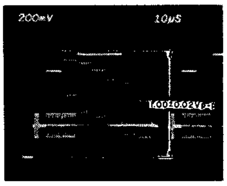
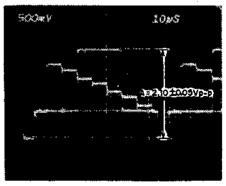
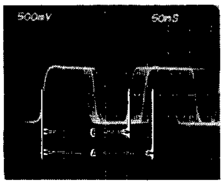
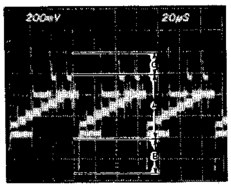
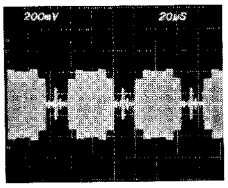
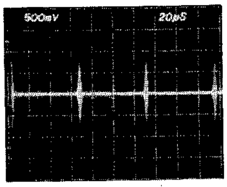
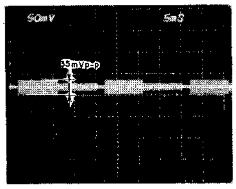
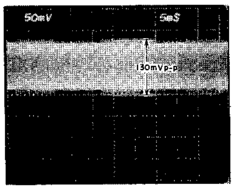
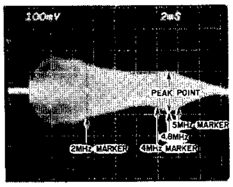
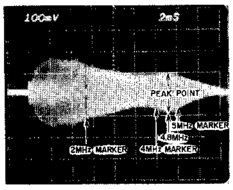
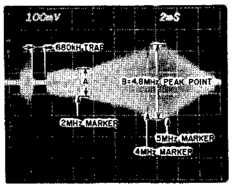
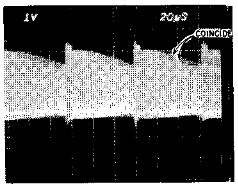
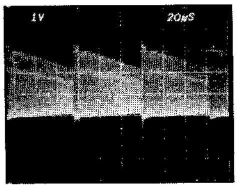
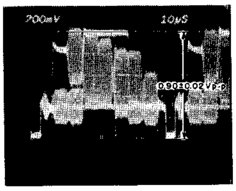
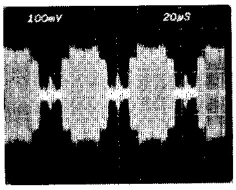
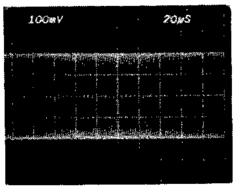
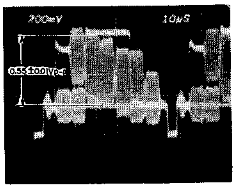

IC1
HD14050
IC2
MB883030
IC3 MB88401
VR1
CHARACTOR
POSITION

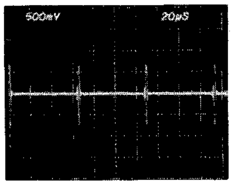
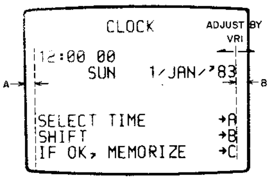
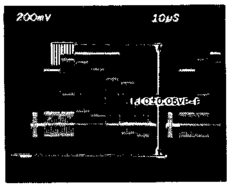
Fig. 8-5 Operation P.C Board Adjustment Points

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	AFC	Color Bar from Color Bar Generator	EE	TP14	VR12	 Adjust VR12 so that A is within DC4.6±0.05V
2	VIDEO Judge circuit check	Color Bar from Color Bar Generator	EE	TP16	Confirmation	1. At the same condition as step 1 confirm that the voltage at TP16 is about DC12V. 2. Disconnect the VIDEO Input (Non VIDEO condition) confirm that the voltage at TP16 is DC OV.
3	EE level	Color bar from Color Bar Generator	EE	TP2 TP3	VR7	 1. Adjust VR7 so that the VIDEO Output (TP2) is within 1.00±0.02vp-p. 2. Confirm that RF output (both Y & chroma signals) is appeared at TP3.
4	AGC Gain	Color Bar from Color Bar Generator	EE	TP5	VR4	 1. Adjust VR4 so that A is within 2.10±0.05Vp-p.
5	FM OSC	Color Bar from Color Bar Generator	EE	TP21	VC1 (Carrier set) VR5 (Deviation)	 Carrier set A = 0.263μS Deviation B = 0.208μS

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
6	White clip and Dark clip	Color Bar from Color Bar Generator	EE	TP6	VR1 (White clip) VR3 (Dark clip)	 1. Adjust VR1 and VR3 so that the waveform at TP6 is as shown above. White clip A:B=1.0:0.6 Dark clip A:C=1.0:0.4
7	AFC 625kHz Check	Color Bar from Color Bar Generator	EE	TP18	Confirmation	1. Mode switch to SECAM 2. Supply color bar signal to line input. 3. Connect a Frequency counter and oscilloscope to TP18. 4. Confirm that the frequency of the waveform is 625kHz of Duty 50%.
8	APC OSC	Color Bar from Color Bar Generator	EE	TP10	VC3	1. Mode switch to SECAM 2. Supply color Bar signal to line input. 3. Connect a frequency counter and oscilloscope to TP10. 4. Adjust VC3 so that the frequency reads 5.06571MHz± 10Hz. 5. Confirm that the level of the waveform is about 400mVp-p.
9	REC ACC check	Color Bar from Color Bar Generator	EE	TP9 TP25	Comfirmation	 1. Connect an oscilloscope to TP9 and confirm that the waveform is as shown above. 2. Connect an oscilloscope to TP25 and confirm that the signal disappears when Mode switch is changed to B/W position.
10	Gated Burst Check	Color bar from Color Bar Generator	EE	TP13	Confirmation	 Confirm that the color Burst signal is picked out properly as shown above.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
11	REC Current	Color Bar from Color Bar Generator	REC	TP19 or TP20	VR10 VR2	1. Turn the VR2 fully counterclockwise.  2. Adjust VR10 so that the chroma REC current waveform is 35mVp-p as shown above.  3. Adjust VR2 so that the Y REC current waveform is 130mVp-p as shown above.
12	Head peak (F0) Frequency	RF Sweep Tape (AT750802)	PB	TC-1 ③	VC301 (CH-1) VC302 (CH-2)	(CH-1)  1. Adjust VC301 (CH-1) so that the Peak Frequency is 4.8MHz as shown above. (CH-2)  2. Adjust VC302 (CH-2) so that the peak Frequency is 4.8MHz as shown above.
13	Video Head Q (Peaking)	RF Sweep Tape (AT750802)	PB	TR305 emitter (TP23)	VR301	 1. Adjust VR301 so that "Q" is set at the radio of A:B = 1:3.2 ± 0.1 2. Confirm that the trap for 680kHz is activate as shown above.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
14	Carrier Balance	Reference Tape (AT750795)	PB	TP17	VR8	 (NO GOOD)  (GOOD) Adjust VR8 so that the waveform is as shown above.
15	PB Y level	Color Bar Tape (AT750797)	PB	TP2	VR9	 Adjust VR9 so that the video signal level at TP2 is 0.90±0.02Vp-p.
16	Local OSC	Color Bar Tape (AT750797)	PB	TP15	VR2	1. Connect a frequency counter to TP15. 2. Adjust VC2 so that the frequency counter reads 4.433619MHz±10Hz
17	PB ACC Check	Color Bar Tape (AT750797)	PB	TP9 TP10	Confirmation	  Confirm that the waveform at TP9 and TP10 are as shown above.
18	PB Chroma level	Color Bar Tape (AT750797)	PB	TP2	VR11	 Adjust VR11 so that the cyan level is within 0.55±0.01Vp-p.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
19	PB Gated Burst check	Color Bar Tape (AT750797)	PB	TP13	Confirmation	 Confirm that the color burst signal is picked out properly as shown above.
20	Character Position		EE	Monitor screen	VR1 (Operation PCB)	 CLOCK ADJUST BY VR1 12:00 00 SUN 1/JAN/'83 A B SELECT TIME →A SHIFT →B IF OK, MEMORIZE →C 1. Display the character on the monitor screen. 2. Adjust VR1 so that the space A and B are same.
21	B/C Clip level	Color Bar from Color Bar Generator	PB	TP2	VR6	 1. Display character to the monitor screen. 2. Adjust so that the Video signal level is 1.10±0.05Vp-p.

Note: The adjustment is Step 10 can be accomplished by checking of two test points (TP19 or T20), and use the another one for confirmation.

8-4. SKEW JUMP ADJUSTMENT

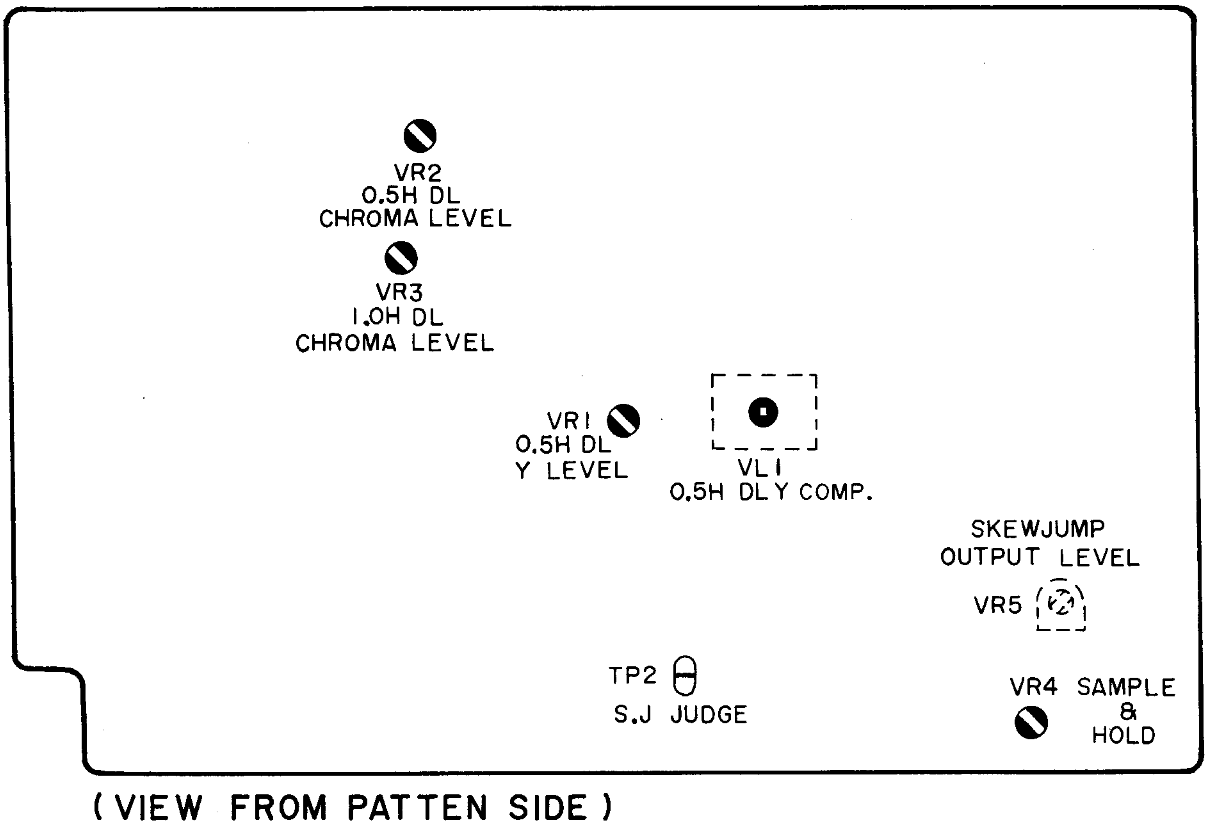
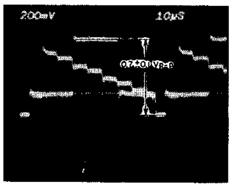
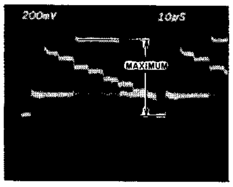
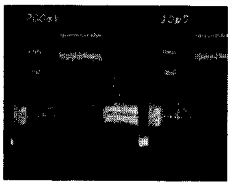
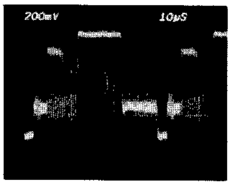
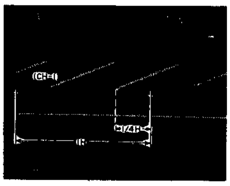
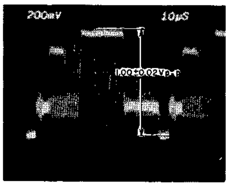
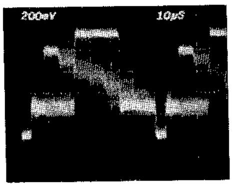
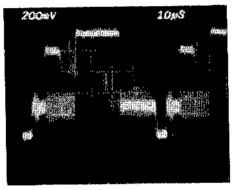
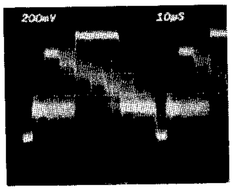
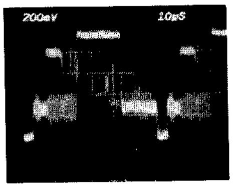

VR2
0.5H DL
CHROMA LEVEL
VR3
1.0H DL
CHROMA LEVEL
VR1
0.5H DL
Y LEVEL
VL1
0.5H DLY COMP.
SKEWJUMP
OUTPUT LEVEL
VR5
TP2
S.J JUDGE
VR4 SAMPLE
&
HOLD
(VIEW FROM PATTEN SIDE)

Fig. 8-6 Skew Jump P.C Board Adjustment Points

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
1	Input Y-level	Color Bar Test Tape	PB	IC1 Pin ㉒	Confirmation	 Confirm so that the Y-level is 0.7±0.1Vp-p.
2	0.5H DL Y composition	Color Bar Test Tape	PB	IC1 Pin ⑭	VL1	 Adjust VL1 so that the Y-level is maximum.
3	0.5H DL Y-level	Self Recorded Tape at LP mode	Review (LP)	TP2 (VIDEO PCB)	VR1	 (NO GOOD)  (GOOD) Adjust VR1 so that the 0.5H delayed Y-level and through Y-leve are same.
4	Sample and Hold	Self Recorded Tape at LP mode	Review (LP)	IC1 Pin④(CH-1) Pin⑨(CH-2)	VR4	 Adjust VR4 so that the Figure is as shown above.
5	VIDEO Output level		PB	TP2 (VIDEO PCB)	VR5	 Adjust VR5 so that the Video output Y level is 1.00±0.02Vp-p.

Step	Adjustment Item	Input	Mode	Test Point	Adjustment Parts	Result & Remarks
6	0.5H DL Chroma level	Self Recorded Tape at LP mode	Review (LP)	TP2 (VIDEO PCB)	VR2	 (NO GOOD)  (GOOD) Adjust VR2 so that the 0.5H delayed chroma level and through chroma level are same.
7	1.0H DL Chroma level	Self Recorded Tape at LP mode	Review (LP)	TP2 (VIDEO PCB)	VR3	 (NO GOOD)  (GOOD) Adjust VR3 so that the 1.0H delayed chroma level and through chroma level are same.

Notes: 1. All the skew Jump P.C Board adjustment, use the self recorded tape from Color Bar Generator at LP (6H) mode.
2. At the steps 3,4,5 and 6, two signal waveforms (Delayed signal and passed signal) are appearing at TP2.

8-5. DEMODULATOR ADJUSTMENT

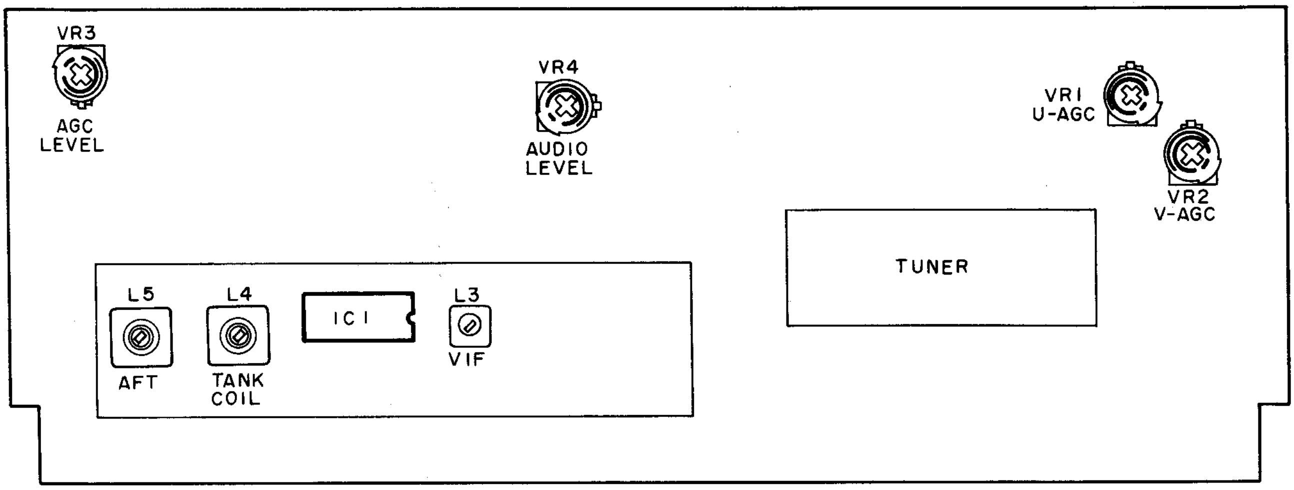

VR3
AGC LEVEL
VR4
AUDIO LEVEL
VR1
U-AGC
VR2
V-AGC
TUNER
L5
L4
IC1
L3
AFT
TANK COIL
VIF

Fig. 8-7 Demodulator P.C Board Adjustment Point

8-5-1. TANK COIL ADJUSTMENT (Refer to Fig. 8-7 to Fig. 8-9)

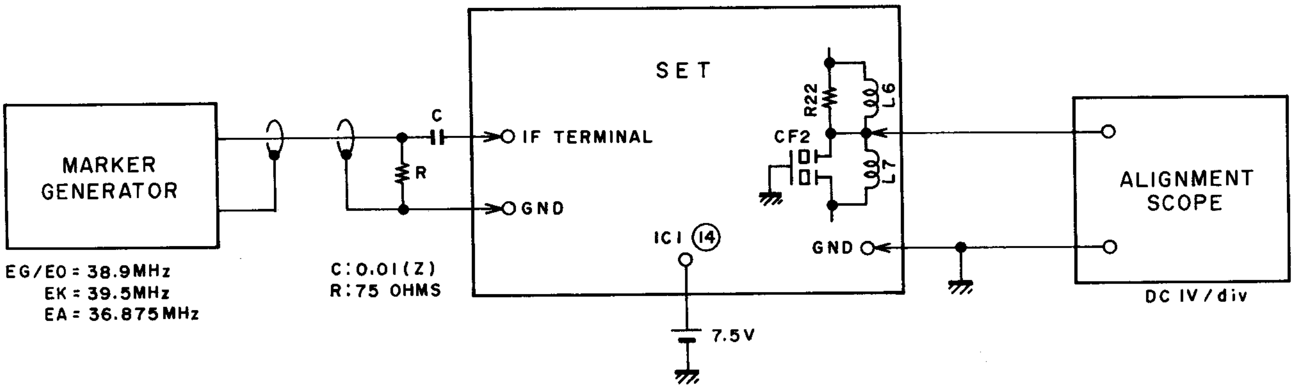

MARKER GENERATOR
EG/EO = 38.9MHz
EK = 39.5MHz
EA = 36.875MHz
C
R
C: 0.01 (Z)
R: 75 OHMS
SET
IF TERMINAL
GND
R22
L6
CF2
L7
IC1 ⑭
GND
7.5V
ALIGNMENT SCOPE
DC 1V/div

Fig. 8-8

a) Apply 50 mVp-p in IF frequency (EG/EO = 38.9 MHz, EK = 39.5 MHz, EA = 36.875 MHz).

b) Connect the alignment scope as shown in Fig. 8-8.

c) Apply DC 7.5V to Pin ⑭ of IC1.

d) Adjust L4 so that the DC voltage appearing on the alignment scope will be minimum.

* If only the TANK COIL (L4) was replaced, this adjustment can be accomplished as follows.

a) Receive a video signal (color bar, etc) and observe the video output signal.

b) Turn the TANK COIL (L4) counter-clockwise from Lower end (core moves upwards) so that the level of the burst signal becomes minimum as shown in Fig. 8-9.

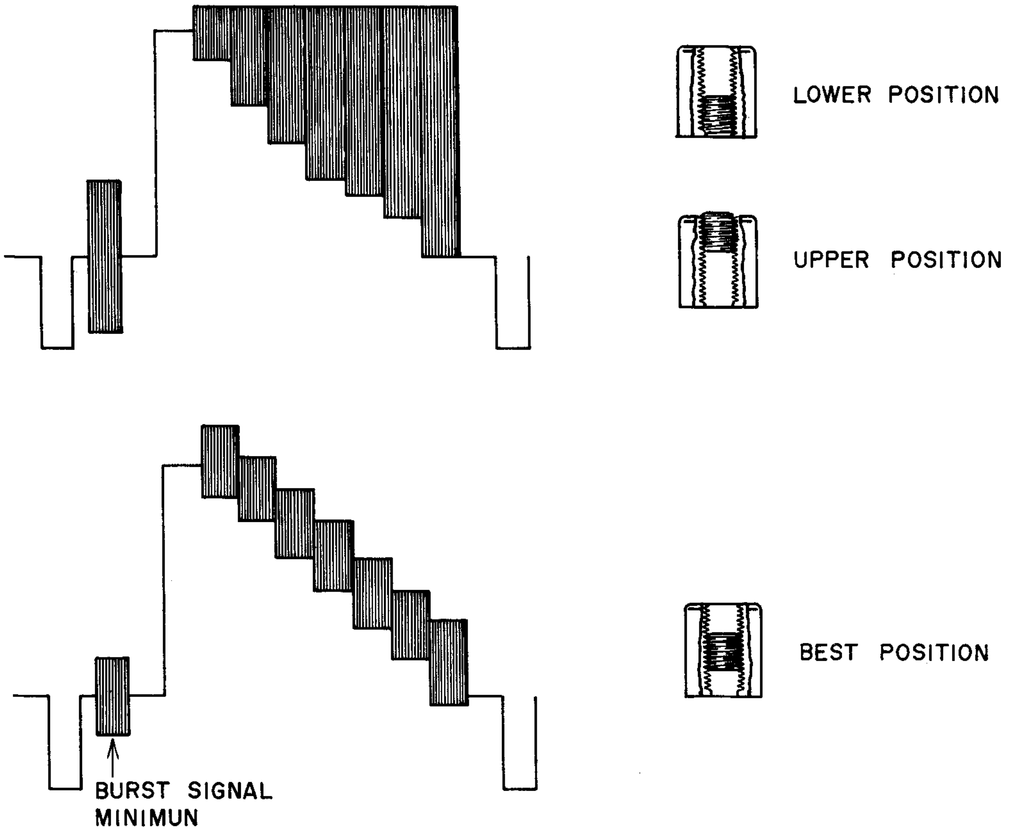

LOWER POSITION
UPPER POSITION
BEST POSITION
BURST SIGNAL
MINIMUN

Fig. 8-9

8-5-2. AFT ADJUSTMENT (Refer to Fig. 8-10 to Fig. 8-12)

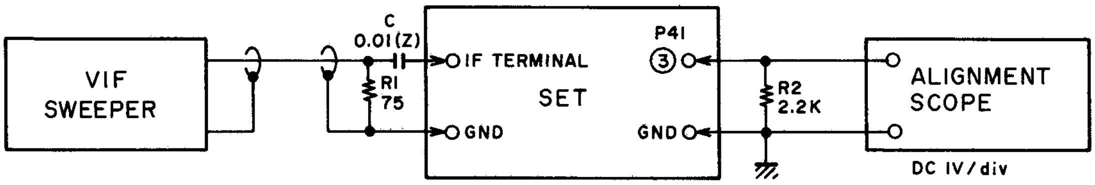

VIF
SWEEPER
C
0.01(Z)
R1
75
IF TERMINAL
GND
SET
P41
③
GND
R2
2.2K
ALIGNMENT
SCOPE
DC 1V/div

Fig. 8-10

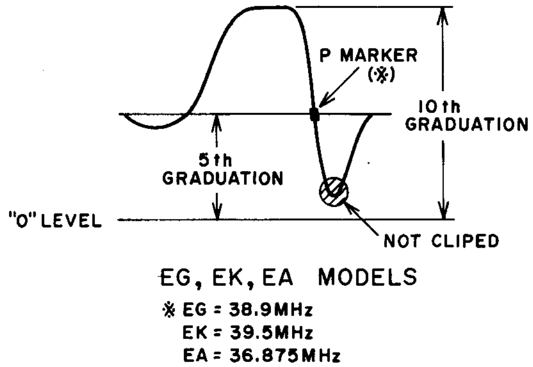

P MARKER
(※)
10th
GRADUATION
5th
GRADUATION
"0" LEVEL
NOT CLIPED
EG, EK, EA MODELS
※ EG = 38.9MHz
EK = 39.5MHz
EA = 36.875MHz

Fig. 8-11

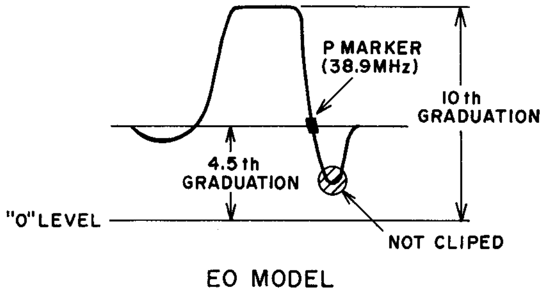

P MARKER
(38.9MHz)
10th
GRADUATION
4.5th
GRADUATION
"0" LEVEL
NOT CLIPED
EO MODEL

Fig. 8-12

a) Connect VIF sweeper output 70 dB to the IF terminal.
b) Connect the alignment scope to the AFT terminal (Pin③ of P 41).
c) Give an optional size to the waveform with the IF AGC volume, and make approximate adjustment with L5 so that the marker will be positioned at 5 th graduation (4.5 th Graduation for EO model) of the alignment scope.
d) Stop with IF AGC volume before the waveform is clipped.
e) Adjust with L5 so that the marker (EG/EO=38.9 MHz, EK=89.5 MHz, EA=36.875 MHz) will be at 5th graduation (4.5th graduation for EO model) of the alignment scope (Figs. 8-11, 8-12).

8-5-3. VIF ADJUSTMENT (Refer to Fig. 8-13 to 8-14)

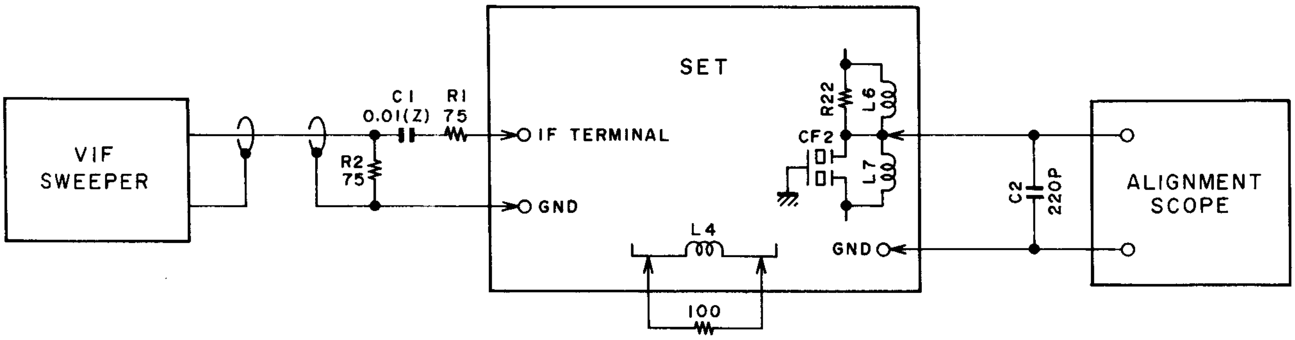
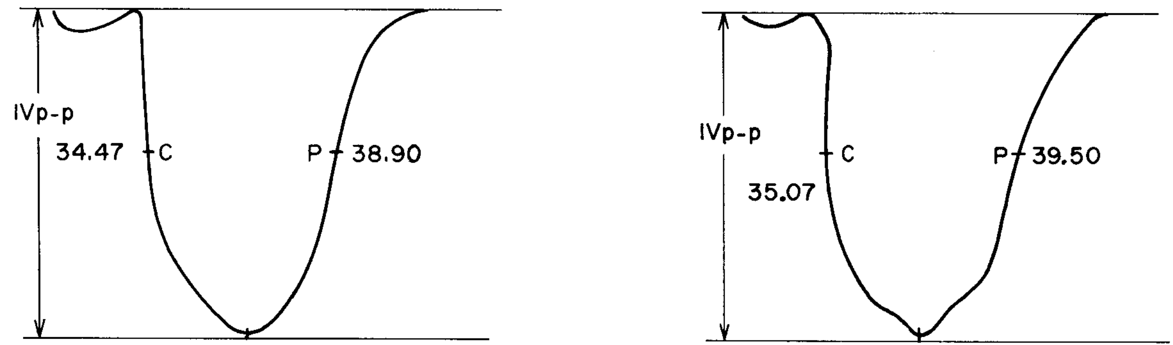
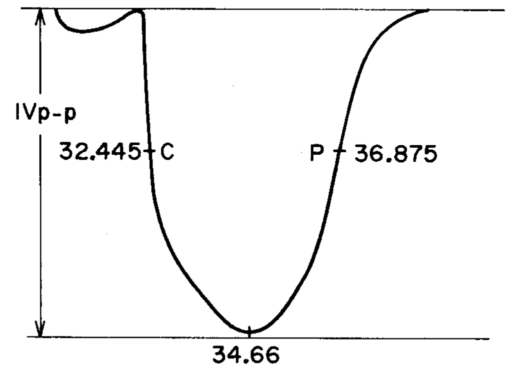


Fig. 8-13



EG, EO, EG-G, EG-M MODELS

EK MODEL



EA MODEL

Fig. 8-14

a) Apply VIF sweeper output of 70dB to IF terminal.
b) Connect the Alignment scope as shown Fig. 8-13.
c) Connect dummy resistors of 100 ohms to both ends of the tank coil (L4).
d) Set the alignment scope to 10th graduation by means of the IF AGC volume and adjust the L3 so that the center, P and C marker positions are maximum as shown in Fig. 8-14.
e) Adjust the Tuner IF coil so that the P and C level is as shown in Fig. 8-14.

8-5-4. IF AGC ADJUSTMENT

a) Tune the RF signal (EG/EO=12 CH, Color Bar, EA=6 CH Color Bar, EK=30 CH Color Bar)
b) Connect an oscilloscope to video output terminal and adjust VR3, so that the video output level is 0.9 Vp-8.

8-5-5. RF AGC ADJUSTMENT

V-AGC

a) Receive VH channel and connect oscilloscope to the video out terminal (Pin ④ of P 42).
b) Adjust VR2, so that the Noise is desappears from the Noise condition and sync. signal becomes rather small.

U-AGC

a) Receive UHF channel, and connect oscilloscope to the video output terminal (Pin ④ of P 42).
b) Adjust VR1 in the same way as U-AGC Adjustment.

8-5-6. AUDIO OUTPUT ADJUSTMENT

a) Apply DC 9.0V to Pin ② of P 1.
b) Connect an AC voltmeter and a distortion meter to Pin ② of P 42.
c) Add the following Rf signals to ANT IN.
EG/EO/EA model VHF 12 CH (Color Bar) }
EK model UHF 0 CH (Philips) } 58dB
d) Adjust with VR4 so that the reading of the AC voltmeter will be – 6 dB.

IX. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number	Remarks
Video P.C Board	V1017A5040	
Skew Jump P.C Board	V1017A5120	
Servo & Audio P.C Board	V1017A5010	
Operation P.C Board	V1015A505A	
Power Supply & Syscon P.C Board	V1017A5030	
Mecha Drive P.C Board	V1015A502A	
Drive P.C Board	M3201C5010	
Power Filter P.C Board	V1017D5060	
AC Head P.C Board	V1017A5140	
L SW B P.C Board	V1015A502B	
L SW A P.C Board	V1015A502C	
RS SW P.C Board	V1015A503D	
Full Erase Head P.C Board	V1017D5130	
Demodulator P.C Board	6B00159C	
Antenna SW P.C Board	V1015A505D	EA model only
LED P.C Board	V1015A505B	
LED P.C Board	V1015A505C	EO model only
Sensor (R) P.C Board	V1015D2350	
Sensor (L) P.C Board	V1015D2150	

X. COMPOSITION OF VARIOUS P.C BOARDS

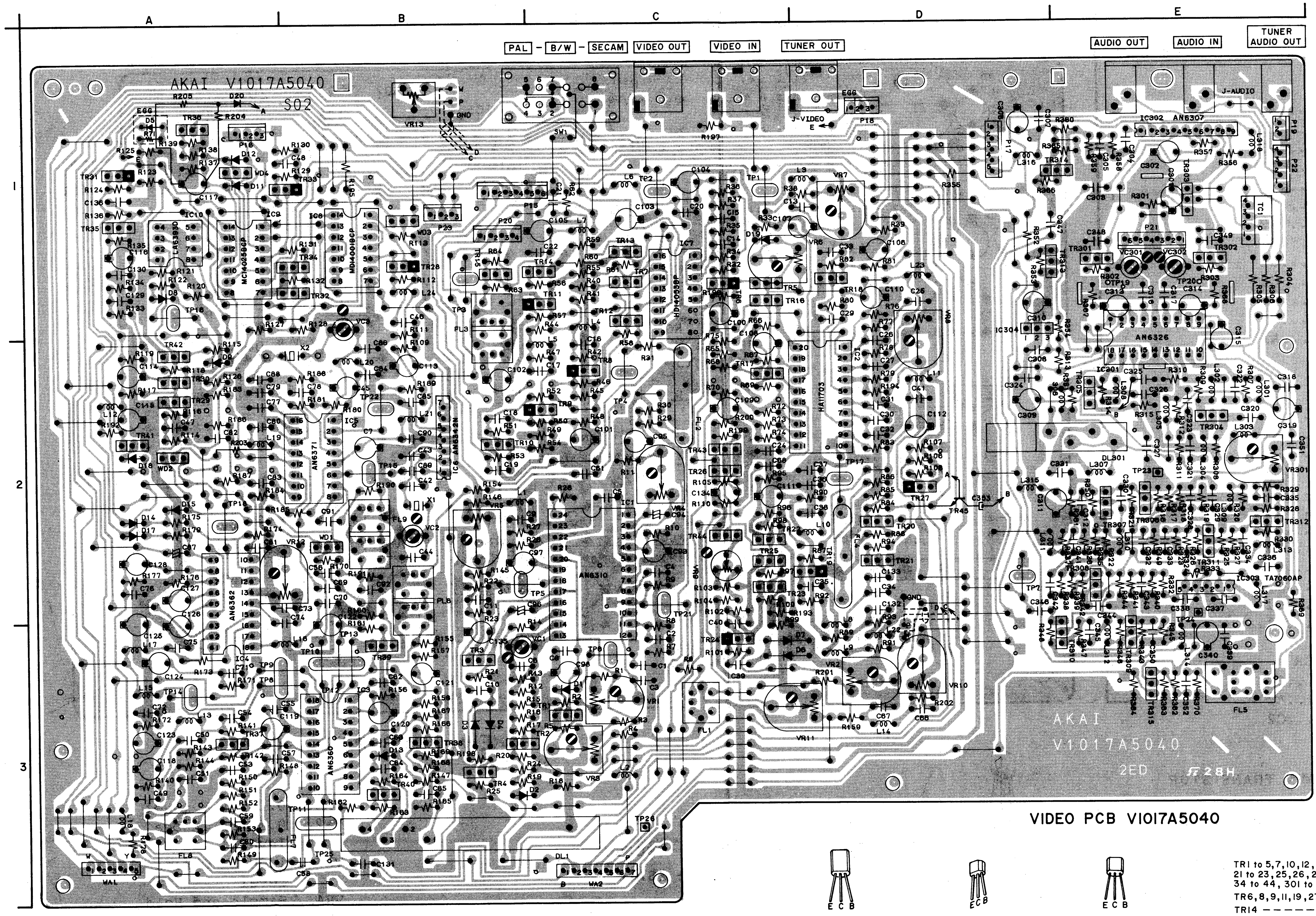
10-1. VIDEO P.C BOARD (V1017A5040)

LOCATION OF COMPONENTS

IC
IC1.......C2
IC2.......D2
IC3.......B3
IC4.......A2
IC5.......B2
IC6.......B2
IC7.......C1
IC8.......B1
IC9.......A1
IC10......A1
IC301.....E2
IC302.....E1
IC303.....E2
IC304.....D1

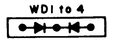
TR
TR1.......C3
TR2.......B3
TR3.......B3
TR4.......B3
TR5.......C1
TR6.......C1
TR7.......C1
TR8.......C2
TR9.......C2
TR10......B2
TR11......C1
TR12......C1
TR13......C1
TR14......C1
TR15......B1
TR16......C1
TR17......C2
TR18......D1
TR19......D2
TR20......D2
TR21......D2
TR22......C2
TR23......C2
TR24......C3
TR25......C2
TR26......C2
TR27......D2
TR28......B1
TR29......A2
TR30......A2
TR31......A1
TR32......B1
TR33......B1
TR34......B1
TR35......A1
TR36......A1
TR37......A3
TR38......B3
TR39......B3
TR40......B3
TR41......A2
TR42......A2
TR43......C2
TR44......C2
TR301.....E1
TR302.....E1
TR303.....E1
TR304.....E2
TR305.....E2
TR306.....E2
TR307.....E2
TR308.....E2
TR309.....E3
TR310.....E3
TR311.....E2
TR312.....E2
TR313.....E1
TR314.....E1
TR315.....E3

CONNECTOR
P15.......E1
P16.......A1
P17.......D1
P18.......D1
P19.......E1
P20.......B1
P21.......E1
P22.......E1
P23.......B1


A
B
C
D
E
1
2
3
PAL
B/W
SECAM
VIDEO OUT
VIDEO IN
TUNER OUT
AUDIO OUT
AUDIO IN
TUNER AUDIO OUT
AKAI V1017A5040
S02
J-VIDEO
J-AUDIO
AN6307
AN6326
AN6371
AN6362
AN6360
AN6310
HA11703
TA7060AP
AKAI
V1017A5040
2ED
28H
WA1
WA2
DL1
DL301
FL1
FL3
FL5
FL8
FL9

VIDEO PCB V1017A5040

B
■●● = PNP TRANSISTOR
●●● = NPN TRANSISTOR
B

WD1 to 4


VR1.....WHT-CLIP
VR2.....REC Y CURRENT
VR3.....DARK CLIP
VR4.....AGC GAIN
VR5.....DEVIATION
VR6.....B/C CLIP
VR7.....EE LEVEL
VR8.....CARRIER BALANCE
VR9.....PB Y LEVEL
VR10....REC CHROMA CURRENT
VR11....PB CHROMA LEVEL
VR12....AFC
VR301...PEAKING
VC1.....CARRIER SET
VC2.....LOCAL OSC
VC3.....APC OSC
VC301...CH-1 FO
VC302...CH-2 FO

2SB774
2SD1010

2SA1115
2SC2603

2SC1213

TR1 to 5,7,10,12,13,15 to 18
21 to 23,25,26,29,32
34 to 44, 301 to 315 -------- 2SC2603(D,E,F)
TR6,8,9,11,19,27,28,31,33 --- 2SA1115(D,E,F)
TR14 ---------------- 2SC1213(C)
TR20,30 -------------- 2SD1010(R,S,T)
TR24 ---------------- 2SB774(R,S,T)

10-2. SKEW JUMP P.C BOARD (V1017A5120)

LOCATION OF COMPONENTS

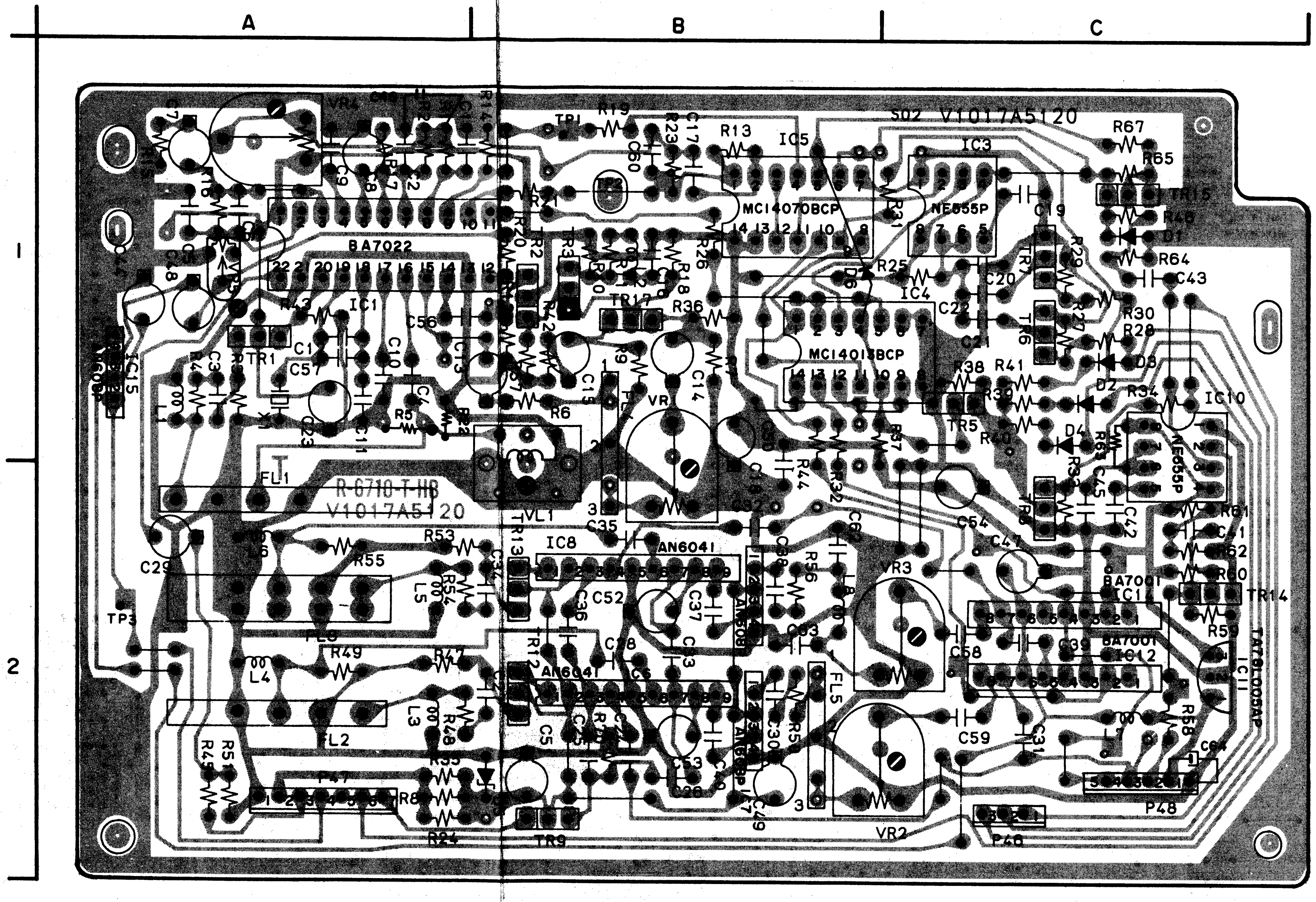
IC
IC1.......A1
IC3.......C1
IC4.......B1
IC5.......B1
IC6.......B2
IC7.......B2
IC8.......B2
IC9.......B2
IC10......C1
IC11......C2
IC12......C2
IC14......C2
IC15......A1

TR
TR1.......A1
TR2.......B1
TR3.......B1
TR5.......C1
TR6.......C1
TR7.......C1
TR8.......C2
TR9.......B2
TR12......B2
TR13......B2
TR14......C2
TR15......C1
TR17......B1

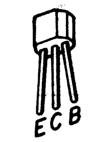
CONNECTOR
P46.......C2
P47.......A2
P48.......C2

●●● = NPN TRANSISTOR
B

●●● = PNP TRANSISTOR
B


A
B
C
1
2
S02 V1017A5120
R-6710-T-HB
V1017A5120
BA7022
MC14070BCP
NE555P
MC14013BCP
AN6041
BA7001
TA7610AP
VR1
VR2
VR3
VR4
VR5
VL1
FL1
FL2
FL5
TP1
TP3
P46
P47
P48

SKEW JUMP PCB V1017A5120

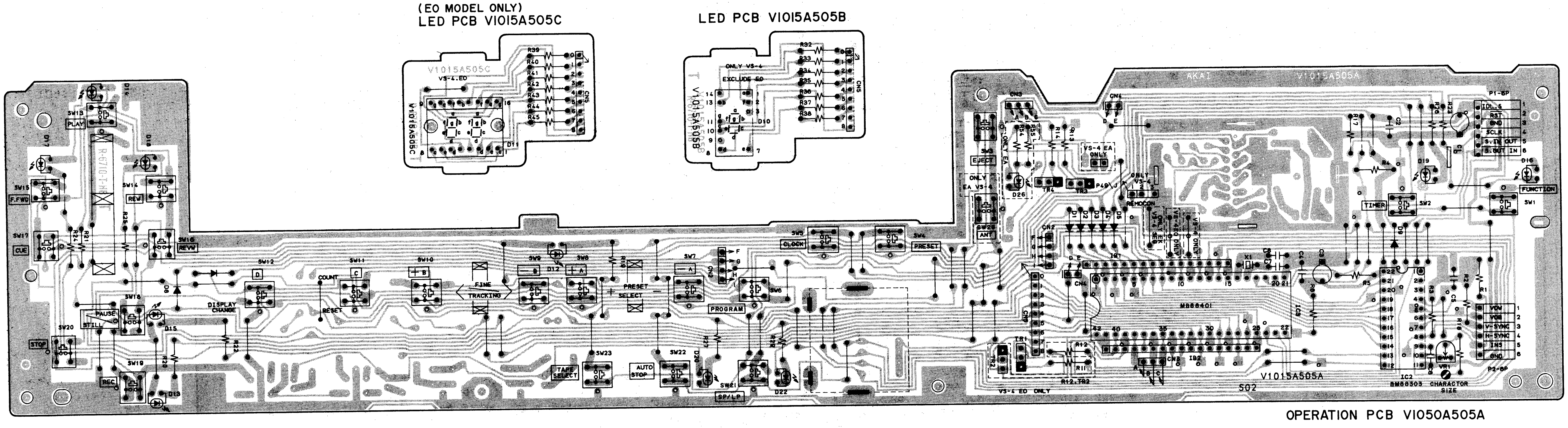


2SA1115
2SC2603

TR1, 2, 5 to 9, 12 to 15, 17 -- 2SC2603
TR3 ---------------- 2SA1115

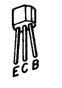
VR1...0.5H DL Y level
VR2...0.5H DL Chroma level
VR3...1.0H DL Chroma level
VR4...Sample and Hold
VR5...Skew Jump Output level
VL1...0.5H DL Comp

10-3. OPERATION P.C BOARD (V1050A505A), LED P.C BOARD (V1015A505B) AND LED P.C BOARD (EO MODEL ONLY) (V1015A505C)


(EO MODEL ONLY)
LED PCB V1015A505C
LED PCB V1015A505B
ONLY VS-4
EXCLUDE EO
CN5
D10
D11
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
PLAY
F.FWD
REW
CUE
REVW
PAUSE
STILL
STOP
REC
DISPLAY CHANGE
RESET
COUNT
FINE TRACKING
PRESET SELECT
PROGRAM
TAPE SELECT
AUTO STOP
SP/LP
CLOCK
PRESET
ANT
EJECT
TIMER
FUNCTION
ONLY EA VS-4
VS-4 EA ONLY
VS-4 EO ONLY
REMOCON
MB88401
IC2
BM88303
CHARACTOR SIZE
VR1
X1
P1-6P
P2-6P
IDL.S
RST
GND
SCLK
S.IN OUT
S.OUT IN
VDW
VDS
V-SYNC
H-SYNC
IN3
GND
AKAI
V1015A505A
S02
OPERATION PCB V1050A505A

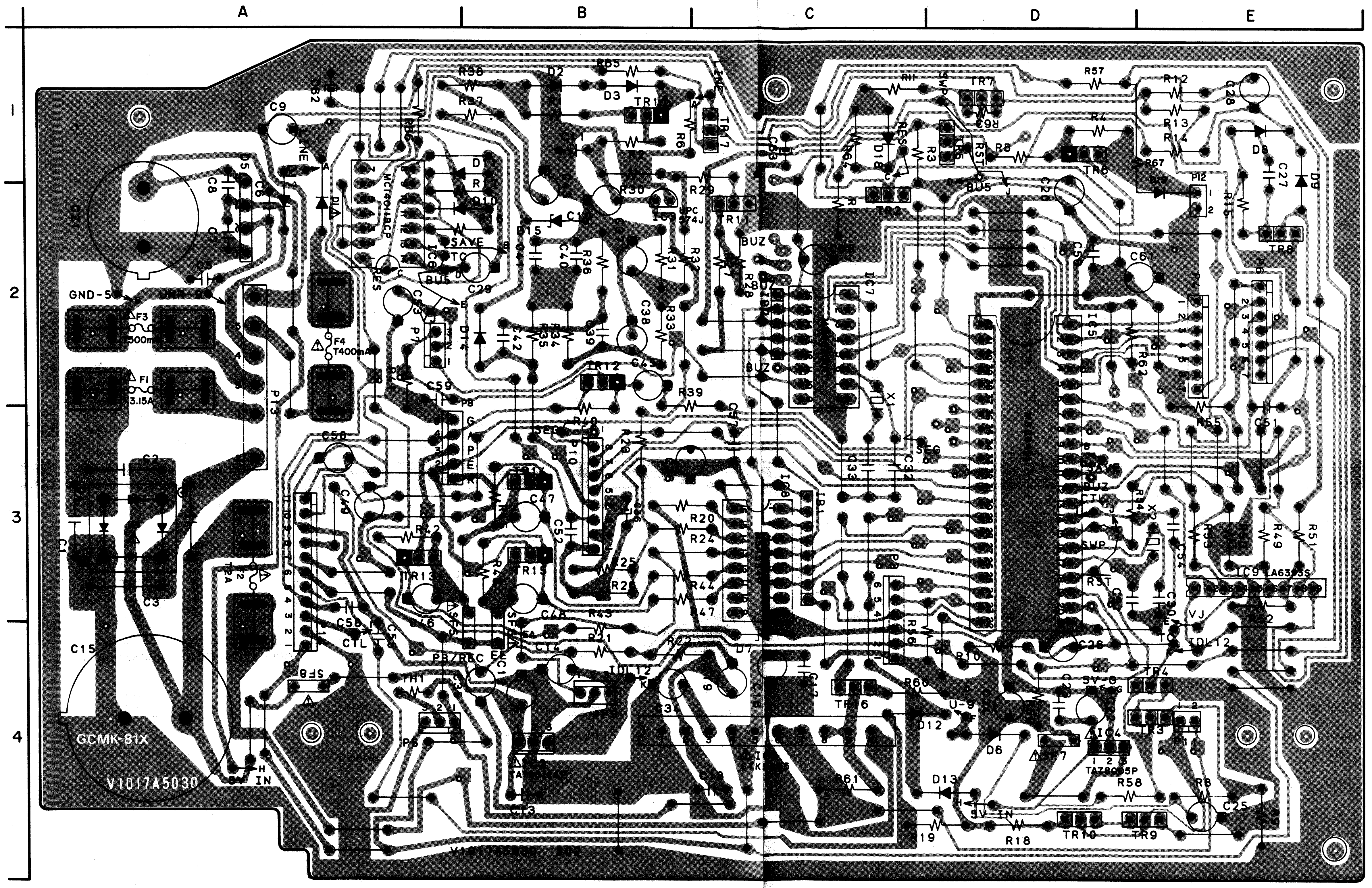
B C E
■●● = PNP TRANSISTOR

TR1 to 4 ----2SA1115



2SA1115

10-4. POWER SUPPLY/SYSCON P.C BOARD (V1017A5030)


A
B
C
D
E
1
2
3
4
GND-5
F3
500mA
F1
3.15A
F4
T400mA
IC6
MC14011BCP
TR1
TR7
TR2
TR6
TR8
TR11
TR12
TR13
TR14
TR15
TR16
TR3
TR4
TR9
TR10
IC3
UPC574J
IC4
TA78005P
IC9
LA6358S
GCMK-81X
V1017A5030
5V IN
V1017A5030 S02

POWER SUPPLY & SYSCON PCB V1017A5030

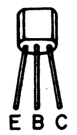
LOCATION OF COMPONENTS

TR
TR1.......B1
TR2.......C1
TR3,4.....E4
TR5to7....D1
TR8.......E2
TR9.......E4
TR10......D4
TR11......C2
TR13......A3
TR14,15...B3
TR16......C4
TR17......C1

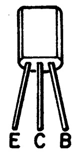
IC
IC1.......C4
IC2.......B4
IC3.......B2
IC4.......D4
IC5.......D3
IC6.......A1
IC7.......C2
IC8.......C3
IC9.......E3

TERMINAL
P3........C3
P4........E2
P5........A4
P6........E2
P7........A2
P8........A3
P9........B4
P10.......B3
P11.......E4
P12.......E2
P13.......A2
P14.......A3

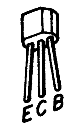
TR1 ------------- 2SA675(A)(E,F,H)
TR2.9 ------------ 2SC2236(O,Y)
TR3.4.5.8.10.11.16.17 -- 2SC2603(D,E,F)
TR6.12 ----------- 2SA1115(D,E,F)
TR7 ------------- 2SD1010(R,S,T)
TR13.14.15 --------- 2SA1282A(E,F,G)



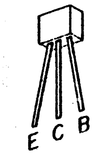
2SA675
2SD1010



2SC2236



2SA1115
2SC2603



2SA1282

[●|● ●] = NPN TRANSISTOR
B

[■|● ●] = PNP TRANSISTOR
B

—▷|— = GERMANUM DIODE

—▶|— = SILICON DIODE

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

10-5. SERVO/AUDIO P.C BOARD (1017A5010)

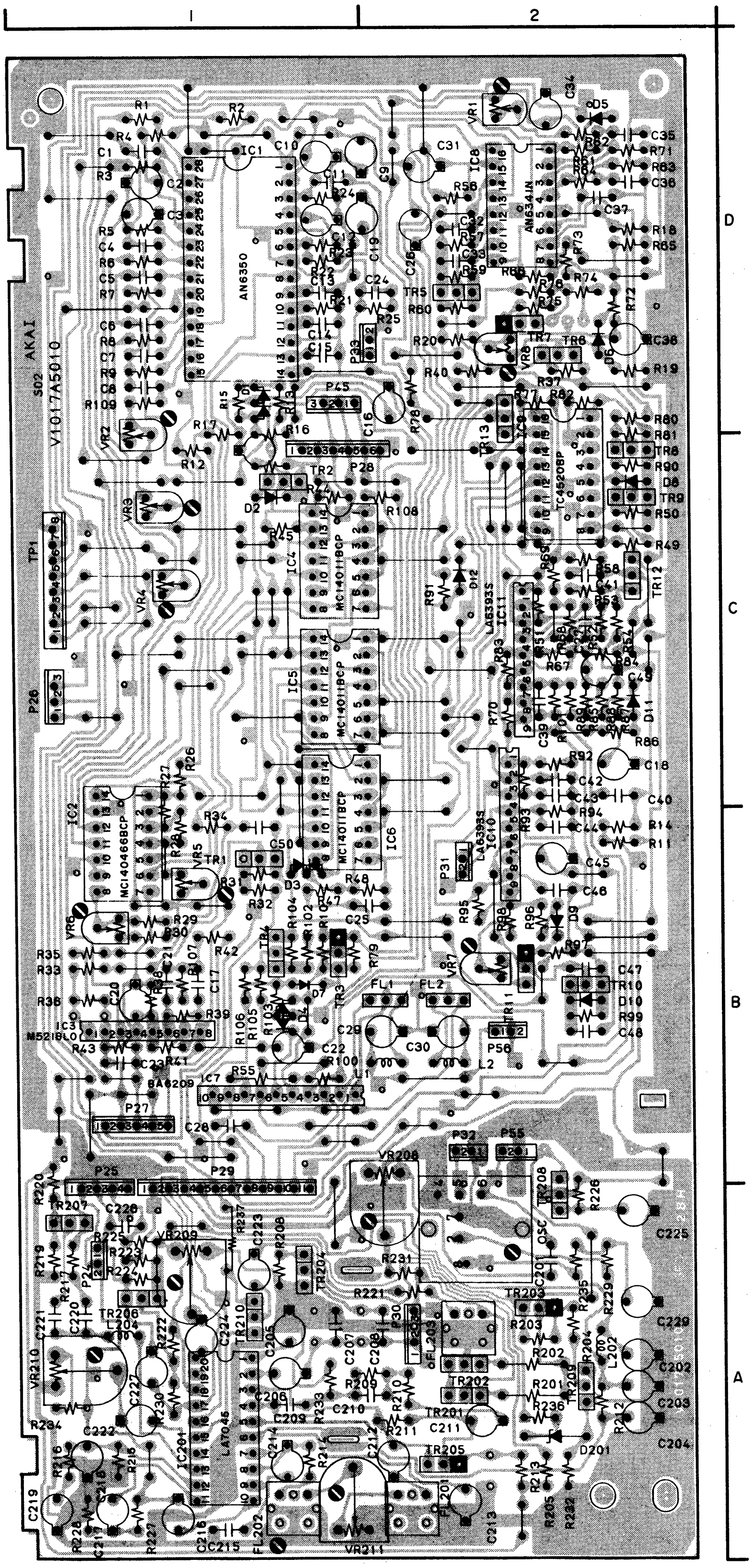
TR1,2,4,5,6,8,9,10,12,13,
204 to 209 ---- 2SC2603 (D,E,F)

TR3,7,11 ------- 2SA1115 (D,E,F)

TR201, 202 ----- 2SD958 (S,T,U)

TR203 ------- 2SB788 (S,T,U)

TR210 -------- 2SD1010 (R,S,T)



1
2
D
C
B
A
AKAI
S02
V1017A5010
TP1
P26
P25
P27
P29
IC1
AN6350
IC2
MC14066BCP
IC3
M5218L
IC4
MC14011BCP
IC5
MC14011BCP
IC6
MC14011BCP
IC7
BA6209
IC8
AN634IN
IC9
TC4520BP
IC10
LA6393S
IC11
LA6393S
IC201
LA7045
VR1
VR2
VR3
VR4
VR5
VR6
VR7
VR8
VR208
VR209
VR210
VR211
FL1
FL2
FL202
FL203
OSC

SERVO & AUDIO PCB V1017A5010

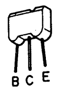
LOCATION OF COMPONENTS

IC	
IC1.......	D1
IC2.......	B1
IC3.......	B1
IC4.......	C1
IC5.......	C1
IC6.......	B1
IC7.......	B1
IC8.......	D2
IC9.......	C2
IC10......	B2
IC11......	C2
IC201.....	A1

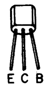
TR	
TR1.......	B1
TR2.......	C1
TR3.......	B1
TR4.......	B1
TR5.......	D2
TR6.......	D2
TR7.......	D2
TR8.......	C2
TR9.......	C2
TR10......	B2
TR11......	B2
TR12......	C2
TR13......	D2
TR201.....	A2
TR202.....	A2
TR203.....	A2
TR204.....	A1
TR205.....	A2
TR206.....	A1
TR207.....	A1
TR208.....	A2
TR209.....	A2
TR210.....	A1

CONNECTOR	
P25.......	A1
P26.......	C1
P27.......	B1
P28.......	C1
P29.......	A1
P30.......	A2
P31.......	B2
P33.......	D2
P45.......	D1
P56.......	B2
TP1.......	C1

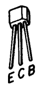
VR1.....	Capstan Motor Normal Speed
VR2.....	REC Switching Point
VR3, VR4	Switching Point
VR5.....	Drum Motor Normal Speed
VR6.....	Color phase
VR7.....	Tracking Preset
VR8.....	Capstan Motor Speed at Cue & Review (Quick Finder) mode
VR208...	Bias Voltage
VR209...	EE Level
VR210...	REC Level
VR211...	P.B Level
FL202...	Bias leak
OSC BLOCK..	Bias OSC Frequency



2SB788
2SD958



2SD1010



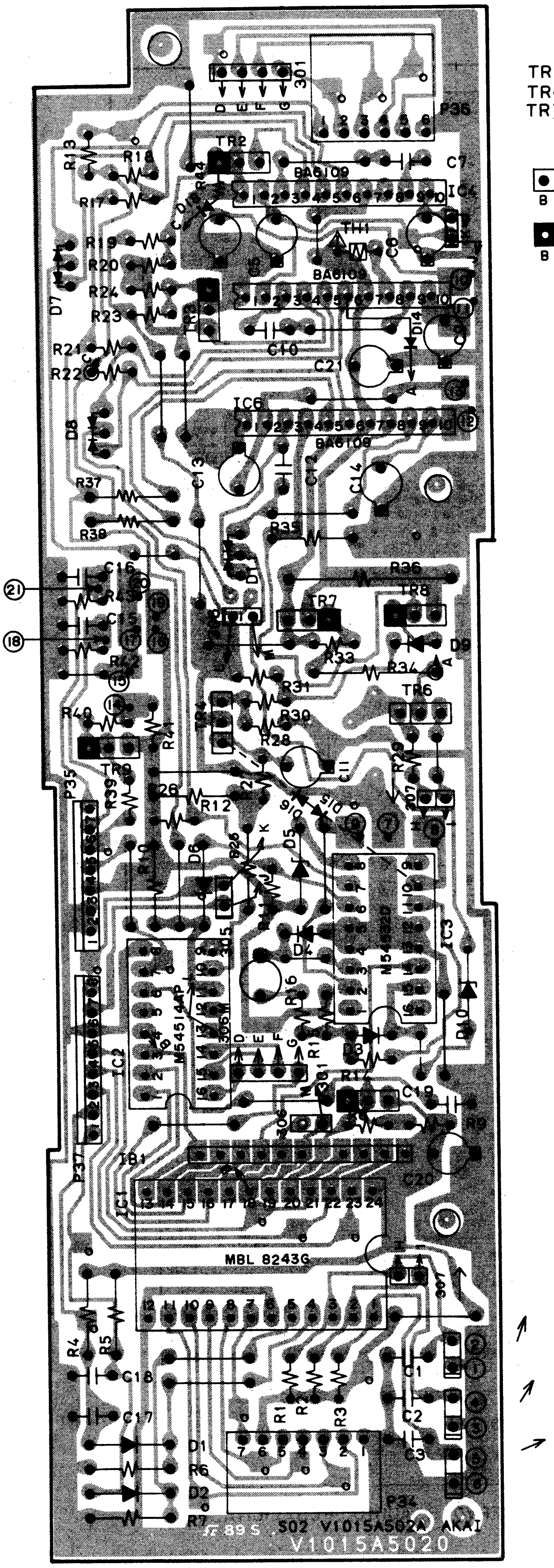
2SC2603
2SA1115

▢●● = NPN TRANSISTOR

■●● = PNP TRANSISTOR

10-6. MECHA DRIVE P.C BOARD

(V1015A502A)

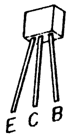

301
P36
TR2
BA6109
IC4
C7
R13
R18
R17
R14
CD12
TH1
C9
R19
R20
R24
R23
D7
IC5
BA6109
C10
D14
C21
R21
R22
IC6
BA6109
D8
C13
C12
C14
R37
R38
R35
R36
C16
R43
C15
R42
TR7
TR8
D9
R33
R34
R31
TR6
R40
R30
R28
TR4
C11
TR9
R39
P35
R26
R12
D15
D16
D5
D6
R10
IC3
M54562P
D4
R16
D10
IC2
M54514AP
305
R11
R14
C19
306
R9
TB1
IC1
C20
MBL 8243G
307
R4
R5
C18
C17
D1
R6
D2
R7
R1
R2
R3
C1
C2
C3
P34
P37
502 V1015A502A AKAI
V1015A5020
21
18

MECHA DRIVE PCB V1015A502A

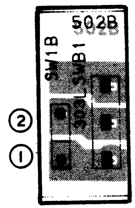
TR1,2,3,8,9 ---2SA1309(Q,R,S)
TR4,6 -------2SC3311(Q,R,S)
TR7 --------2SA1282(E,F,G)

[● ● ●] = NPN TRANSISTOR
B

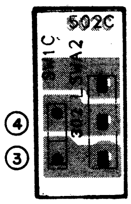
[■ ● ●] = PNP TRANSISTOR
B



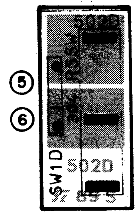
2SA1282
2SA1309
2SC3311


502B
SW1B
SW1B
300
②
①

L SW B PCB
V1015A502B

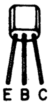

502C
SW1C
SW2A
302
④
③

L SW A PCB
V1015A502C

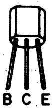

502D
304
SW1D
502D
89 S
⑤
⑥

RS SW PCB
V1015A502D

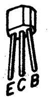
10-8. DEMODULATOR P.C BOARD (EK MODEL) (6B00159C)



2SC388A



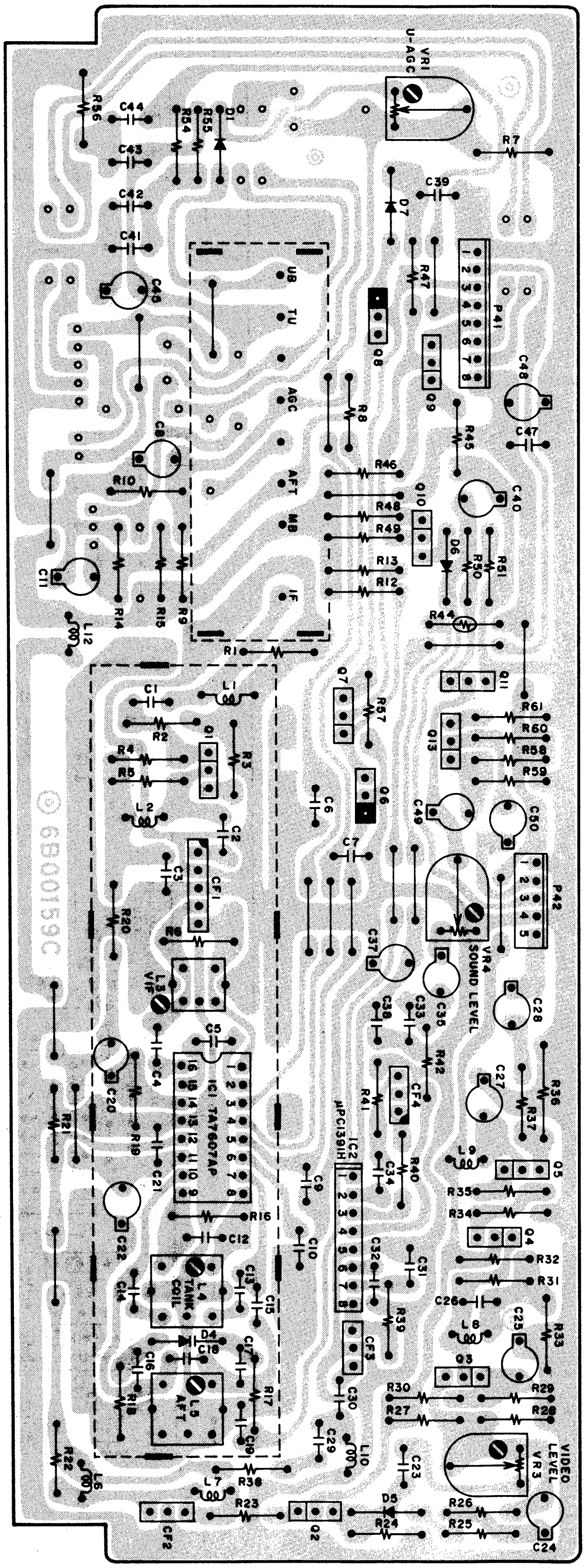
2SC1210



2SA1115
2SC2603

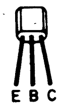
Q1------------2SC388A
Q2,3,4,7,9,10,11,13--2SC2603(D,E)
Q5------------2SC1210(D,E)
Q6,8----------2SA1115(D,E)

■●● = PNP TRANSISTOR
B
○●● = NPN TRANSISTOR
B

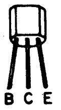

VR1
U-AGC
R56
C44
R54
R55
D1
C43
C42
C41
C45
R7
C39
D7
R47
P41
1 2 3 4 5 6 7 8
Q8
Q9
U8
TU
AGC
AFT
MB
IF
C48
R8
C47
R45
R46
C8
R10
Q10
C40
R48
R49
D6
R50
R51
R13
R12
C11
R14
R15
R9
L12
R44
R1
C1
L1
Q7
R57
Q11
R2
Q1
R3
R61
R60
R58
R59
Q13
R4
R5
C6
Q6
C49
C50
L2
C2
6B00159C
C7
C3
CF1
P42
1 2 3 4 5
R20
R6
C37
VR4
SOUND LEVEL
L3
VIF
C38
C33
C36
C28
C5
C4
R42
C20
IC1 TA7607AP
R41
CF4
C27
R36
R37
R21
R19
C21
IC2
μPC1391H
C9
C34
R40
L9
Q5
R35
R34
R16
C22
C12
C10
C32
C31
Q4
R32
R31
C14
L4
TANK COIL
C13
C15
C26
L8
C25
R39
R33
D4
C18
C17
CF3
Q3
C16
L5
AFT
R17
R18
R30
R29
R27
R28
C30
C19
C29
L10
C23
VIDEO LEVEL
VR3
R22
L6
L7
R38
R23
D5
R26
R24
R25
CF2
Q2
C24

DEMODULATOR PCB (EK)

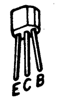
10-7. DEMODULATOR P.C BOARD (EG/EA/EG-G/EG-M MODEL) (6B00159C)



2SC388A



2SC1210

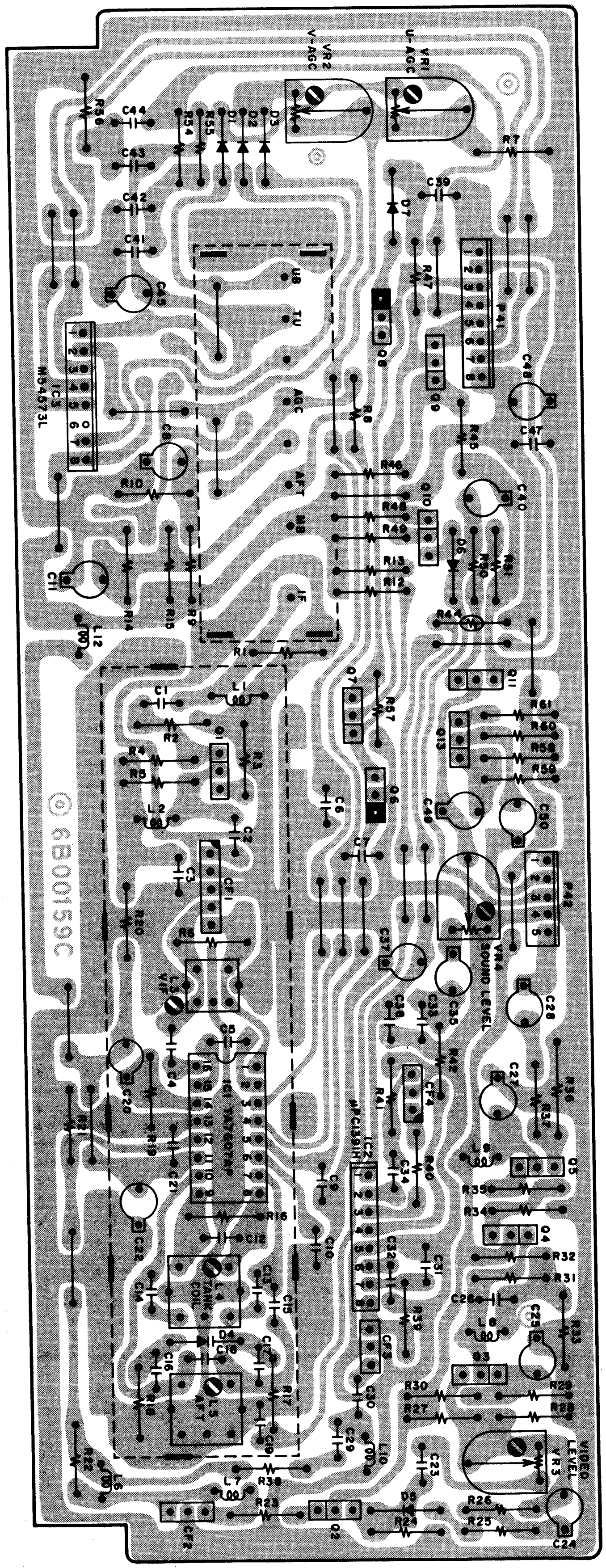


2SA1115
2SC2603

Q1 ------------- 2SC388A
Q2,3,4,7,9,10,11,13 -- 2SC2603 (D,E)
Q5 ------------- 2SC1210 (D,E)
Q6,8 ------------ 2SA1115 (D,E)

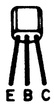
■ ● ● = PNP TRANSISTOR
B

● ● ● = NPN TRANSISTOR
B

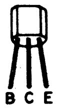

VR2
V-AGC
VR1
U-AGC
R56
C44
C43
C42
C41
C45
R54
R55
D1
D2
D3
R7
C39
D7
R47
P41
Q8
Q9
C48
C47
IC3
M54573L
UB
TU
AGC
AFT
MB
IF
C8
R10
C11
R14
R15
R9
L12
R8
R45
R46
R48
R49
R13
R12
Q10
D6
R50
R51
C40
R44
R1
C1
L1
R2
Q1
R3
R4
R5
L2
C2
C3
CF1
R6
R20
L3
VIF
C5
C4
C20
IC1 TA7607AP
R21
R19
C21
C22
R16
C12
C13
C14
L4
TANK COIL
C15
D4
C18
C16
C17
R18
L5
AFT
R17
C19
R22
L6
L7
R38
R23
CF2
Q2
Q7
R57
Q6
C6
C7
C37
C9
C10
Q11
Q13
R61
R60
R58
R59
C46
C50
P42
VR4
SOUND LEVEL
C36
C33
C35
C28
R42
R41
CF4
IC2
μPC1391H
C34
R40
C27
R36
R37
L9
Q5
R35
R34
Q4
R32
R31
C32
C31
C26
C25
L8
Q3
R39
CF3
R33
R30
R27
R29
R28
C30
C29
L10
C23
VR3
VIDEO LEVEL
D5
R26
R24
R25
C24
© 6B00159C

DEMODULATOR PCB (EG/EA/EG-G/EG-M)

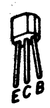
10-9. DEMODULATOR P.C BOARD (EO MODEL) (6B00159C)



2SC388A



2SC1210

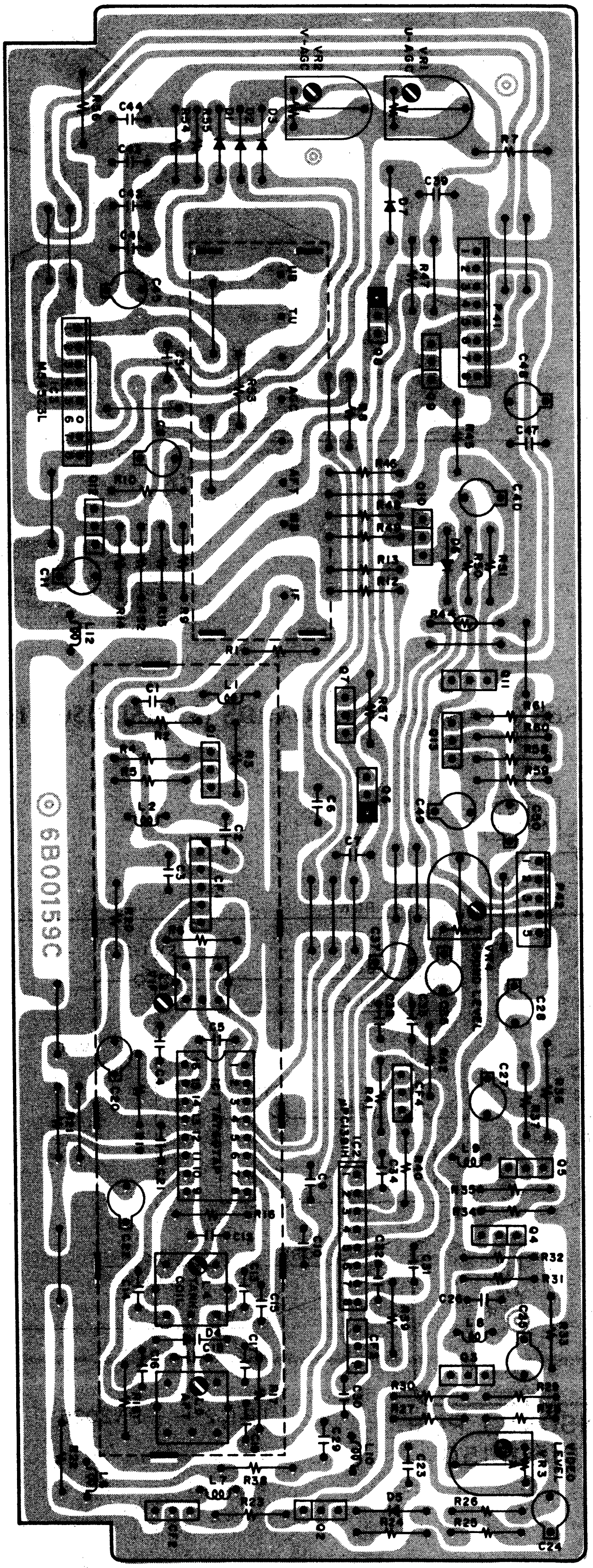


2SA1115
2SC2603

Q1 ------------ 2SC388A
Q2,3,4,7,9,10,11,13 -- 2SC2603 (D,E)
Q5 ------------ 2SC1210 (D,E)
Q6,8,12- --------- 2SA1115 (D,E)

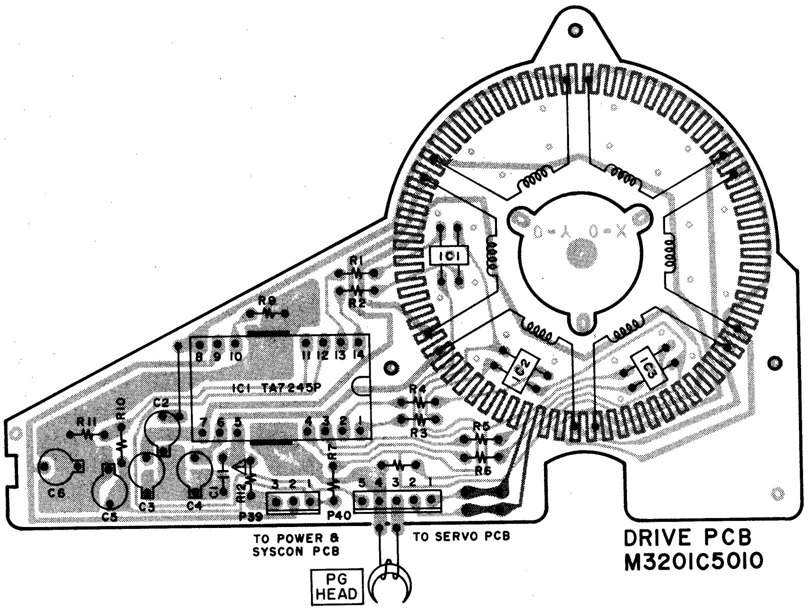
■ ● ● = PNP TRANSISTOR
B

● ● ● = NPN TRANSISTOR
B


VR2 V-AGC
VR1 U-AGC
C44
C39
R7
R10
R1
C1
L1
L2
C6
C7
R45
R13
R12
R59
R35
R34
R32
R31
R30
R27
R26
R23
R38
L7
D5
D4
C23
C24
C28
C27
C47
LEVEL
VIDEO
6B00159C

DEMODULATOR PCB (EO)

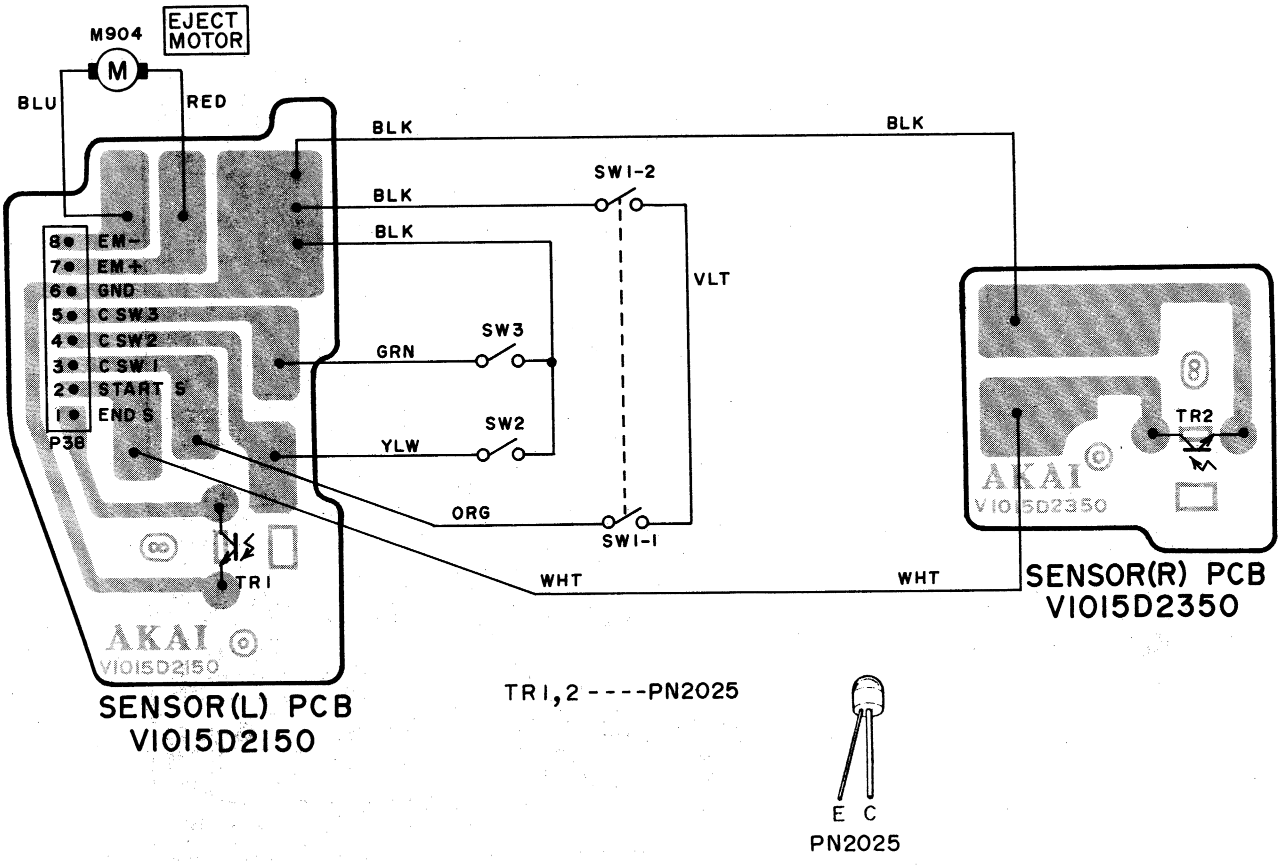
10-10. DRIVE P.C BOARD (M3201C5010)


IC1
R1
R2
R9
8 9 10
11 12 13 14
IC1 TA7245P
7 6 5
4 3 2 1
IC2
IC3
R11
R10
C2
C6
C5
C3
C4
R12
R4
R3
R5
R6
3 2 1
P39
P40
5 4 3 2 1
TO POWER & SYSCON PCB
TO SERVO PCB
PG HEAD
DRIVE PCB
M3201C5010

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

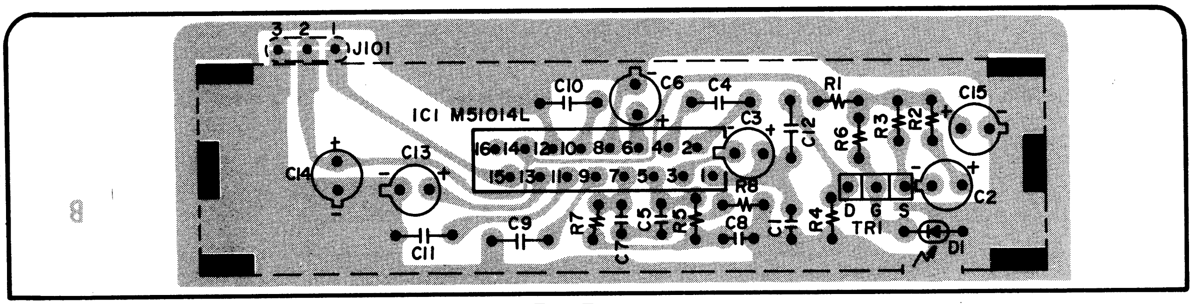
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

10-11. SENSER (L) AND (R) P.C BOARDS (V1015D2150/V1015D2350)

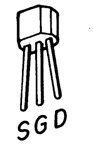

M904
EJECT MOTOR
M
BLU
RED
BLK
BLK
BLK
BLK
SW1-2
VLT
SW3
GRN
SW2
YLW
ORG
SW1-1
WHT
WHT
8 EM-
7 EM+
6 GND
5 C SW3
4 C SW2
3 C SW1
2 START S
1 END S
P38
TR1
AKAI
V1015D2150
SENSOR(L) PCB
V1015D2150
TR2
AKAI
V1015D2350
SENSOR(R) PCB
V1015D2350
TR1,2 ----PN2025
E C
PN2025

10-12. REMOTE CONTROL UNIT RC-V404

1) RECIVER (RC-R4) P.C BOARD

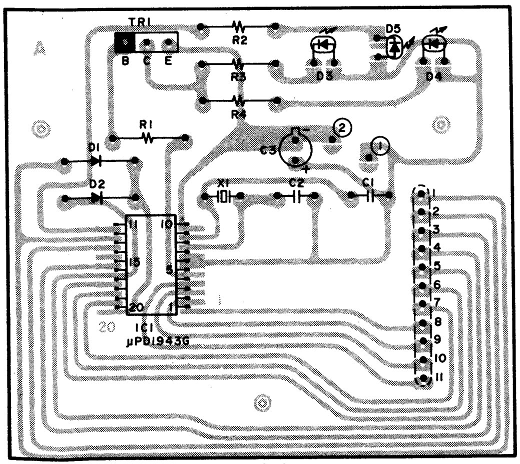

3 2 1
J101
C10
C6
C4
R1
C15
IC1 M51014L
C3
C12
R6
R3
R2
16 14 12 10 8 6 4 2
15 13 11 9 7 5 3 1
C14
C13
R8
C2
C9
R7
C5
R5
C8
C1
R4
D G S
TR1
D1
C11
C7

RECIVER PCB

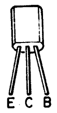


TRI 2SJ40

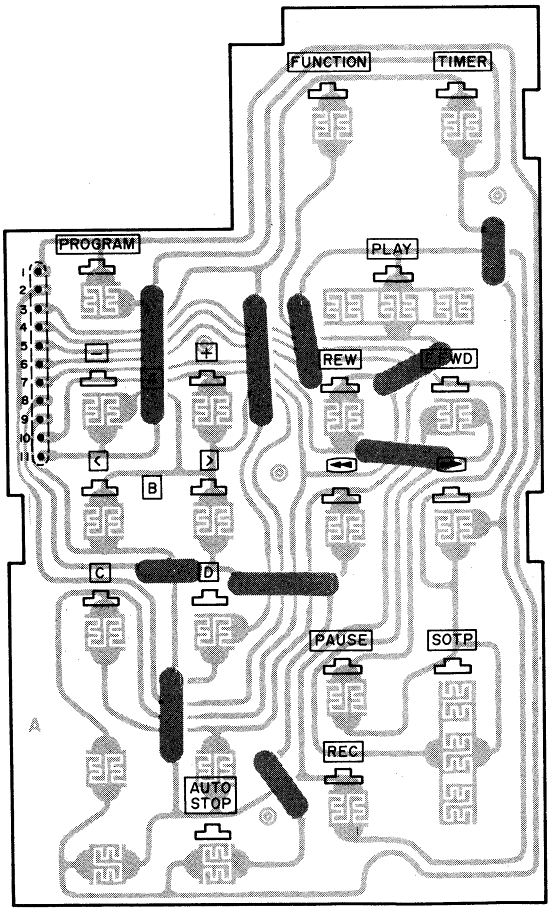
2) TRANSMITTER (RC-T4)


TR1
B C E
R2
D5
R3
D3
D4
R4
R1
②
①
C3
D1
D2
X1
C2
C1
11
10
15
5
20
1
IC1
μPD1943G
1
2
3
4
5
6
7
8
9
10
11
A

TRANSMITER (1) PCB



TRI 2SD545


FUNCTION
TIMER
PROGRAM
PLAY
1
2
3
4
5
6
7
8
9
10
11
−
+
REW
FWD
<
>
B
C
D
PAUSE
SOTP
REC
AUTO STOP
A

TRANSMITTER (2) PCB

MEMO

MEMO

MEMO

SECTION 2

PARTS LIST

TABLE OF CONTENTS

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3. MECHA FRAME BLOCK (2) 57
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5. VIDEO P.C BOARD BLOCK 59
6. SERVO AND AUDIO P.C BOARD BLOCK 60
7. OPERATION P.C BOARD BLOCK 60
8. POWER SUPPLY AND SYSTEM CONTROL P.C BOARD BLOCK 61
9. SKEW JUMP P.C BOARD BLOCK 61
10. MECHA DRIVE P.C BOARD BLOCK 62
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12. POWER FILTER P.C BOARD BLOCK 62
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14. FINAL ASSEMBLY BLOCK 64

II. REMOTE CONTROL UNIT RC-V404

1. TRANSMITTER RC-T4 65
2. RECEIVER RC-R4 65
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ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list
   a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

   b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

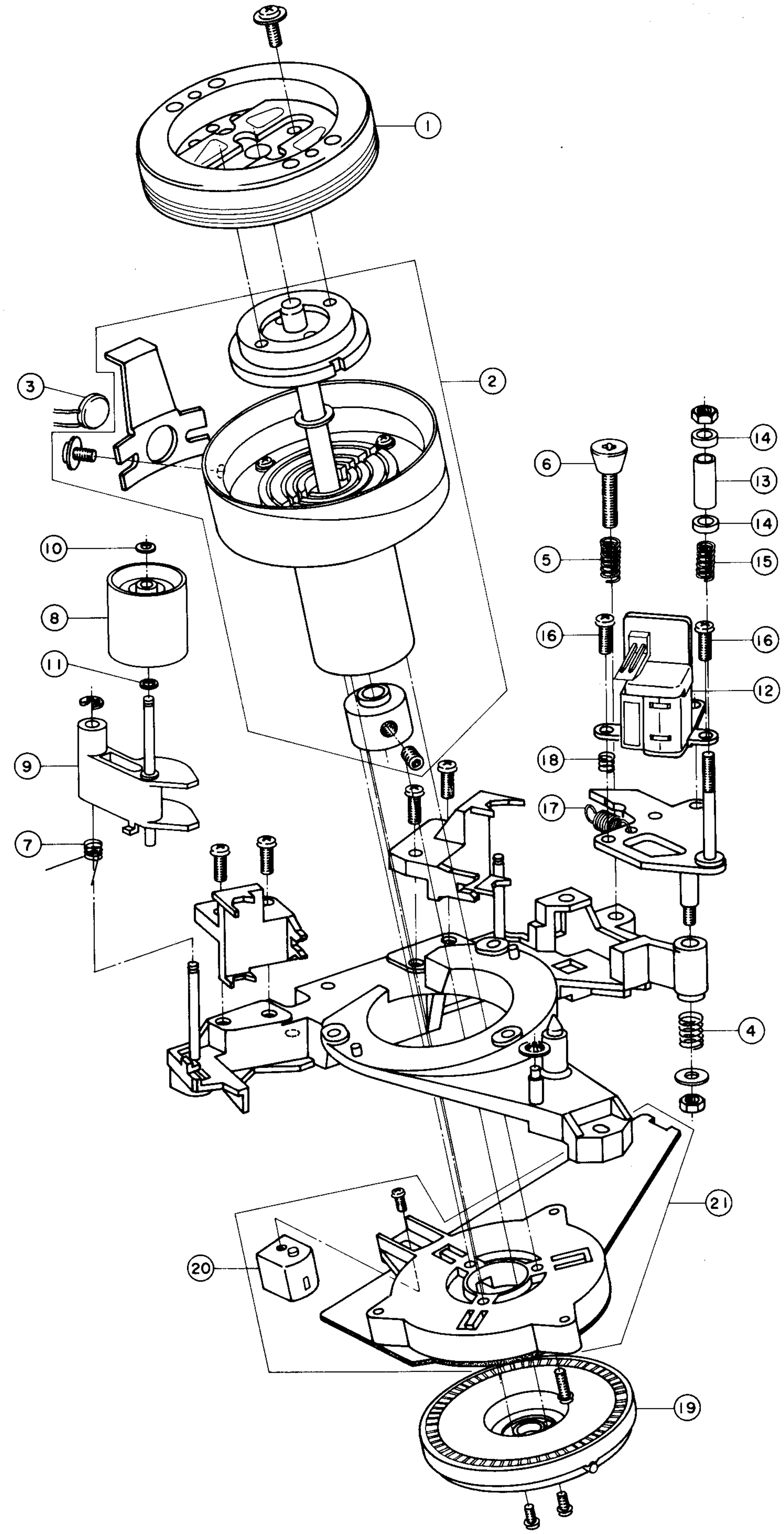
I. MODEL VS-4EG/EK/EA/EG-G/EG-M/EO/EO-P

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.	PARTS NO.	DESCRIPTION
1	AV-V1017A330A	BATTERY PACK BLK VS-4EG
2	BA-M3201A020A	PC DRIVE BLK BLM-400
3	BH-V1017A170A	UPPER DRUM BLK VS-4EG
4	BM-347730	MOTOR CAPSTAN JJN3B01
5	BM-348088	MOTOR MMN-5C2RP
6	BM-345265	MOTOR REEL MJB5B51
7	BT-347997	⚠ TRANS POWER VS-4-5A (T901) (EXCEPT EK, EA)
8	BT-348517	⚠ TRANS POWER VS-4-6A (T901) (EK, EA)
9	BV-345124	RF MODULATOR MDW3-253 (EG, EG-G, EG-M)
10	BV-345125	RF MODULATOR MIW3-253 (EK)
11	BV-345129	RF MODULATOR MSW2-633 (EA)
12	BV-345126	RF MODULATOR MSW3-253 (EO, EO-P)
13	BV-327815	TU IDLER ASSY
14	EC-346765	C S-FIX H ECR-HA010A11 2.8-10
15	EC-346764	C S-FIX H ECR-HA020D11 4-20
16	ED-337617	⚠ D SILICON DBB50C-K8 200/5.0A
17	ED-322238	⚠ D SILICON 1B4B41 100/1.0A
18	ED-347776	D LED BG5608S GRN
19	ED-347777	D LED BR5628S RED
20	ED-249377	D LED GL3AR1 RED
21	ED-283138	D LED GS3PG1 GRN
22	ED-347775	D LED SL2179-01 GRN
23	ED-348462	D LED SL2221T GRN
24	ED-337618	D SILICON DS135E-FB6 100/1.0A
25	ED-301911	D SILICON H DS448
26	ED-337575	D SILICON H GMA-01-4-BT T26
27	ED-523427	D SILICON H 1SS16
28	ED-604541	D SILICON H 1S2076
29	ED-624903	D SILICON H 1S2473
30	ED-316143	D SILICON H 1S2473HS F10
31	ED-200468	D SILICON V DS448-VB6
32	ED-347767	D SILICON V MC911
33	ED-347768	D SILICON V MC921
34	ED-348205	D SILICON V MC931
35	ED-705479	D SILICON 1SV70
36	ED-347899	D ZENER H HZ20CP
37	ED-346637	D ZENER H HZ3FA F10 C2
38	ED-346515	D ZENER H HZ30FA F10 1
39	ED-331667	D ZENER H HZ7 A1
40	ED-346468	D ZENER H HZ9FA F10 B1
41	ED-324937	D ZENER H 05Z6.8 Z
42	ED-348042	D ZENER V HZ9C-1S1
43	EE-345115	TV TUNER CDE1-A04 (EG, EG-G, EG-M)
44	EE-345116	TV TUNER CBE1-013 (EK)
45	EE-345118	TV TUNER CEE1-009 (EO, EO-P)
46	EE-345117	TV TUNER CSE1-017 (EA)
47	EF-347968	⚠ FUSE ICP-F10 150V 0.4A
48	EF-346880	⚠ FUSE ICP-F15 150V 0.6A
49	EF-668474	⚠ FUSE SEMKO T 250V 0.40A
50	EF-593706	⚠ FUSE SEMKO T 250V 0.50A
51	EF-601301	⚠ FUSE SEMKO T 250V 2.00A
52	EF-691007	⚠ FUSE SEMKO T 250V 3.15A
53	EH-705499	FILTER CE SFE 5.5MHz (EXCEPT EK)
54	EH-705500	FILTER CE SFE 6MHz (EK)
55	EH-749839	FILTER CE TPS 5.5MD (EXCEPT EK)
56	EH-749840	FILTER CE TPS 6.0MD (EK)
57	EH-749841	FILTER CE 5.5MC19A (EXCEPT EK)
58	EH-749842	FILTER CE 6.0MC19A (EK)
59	EH-742664	FILTER SAW SAF36.9MZ51Z (EA)
60	EH-742662	FILTER SAW SAF38.9MZ51Z (EXCEPT EK, EA)
61	EH-742663	FILTER SAW SAF39.5MZ51Z (EK)
62	EI-347757	⚠ IC STK5325
63	EI-315243	⚠ IC TA78005P
64	EI-347758	⚠ IC TA78012AP
65	EI-348223	DL MS-26H H-2K
66	EI-322365	DL EFD-EN645A11E
67	EI-337468	DL EFD-JR124A13D
68	EI-348225	DL MS-19 (L-11)
69	EI-348224	DL MS-26 (H-3K)
70	EI-341516	IC AN6041
71	EI-307616	IC AN608P
72	EI-347764	IC AN6307
73	EI-324204	IC AN6310
74	EI-347763	IC AN6326
75	EI-321604	IC AN6341N
76	EI-324203	IC AN6342N
77	EI-326044	IC AN6350
78	EI-324151	IC AN6360
79	EI-324160	IC AN6362
80	EI-324182	IC AN6371
81	EI-330352	IC BA6109
82	EI-347778	IC BA6209
83	EI-348222	IC BA7001
84	EI-348220	IC BA7022
85	EI-347733	IC DN6838
86	EI-322309	IC HA11703
87	EI-328593	IC HD14053BP
88	EI-347781	IC LA6393D
89	EI-347779	IC LA6393S
90	EI-347780	IC LA7045
91	EI-347766	IC MBL8243M
92	EI-337519	IC MB88301-A
93	EI-347773	IC MB88303M
94	EI-345133	IC MB88401-206M
95	EI-347759	IC MB88401-207K (EXCEPT EG-G)
96	EI-348737	IC MB88401-210K (EG-G)
97	EI-310183	IC MC14001BCP
98	EI-257602	IC MC14011BCP
99	EI-698703	IC MC14013BCP
100	EI-310038	IC MC14025BCP
101	EI-304475	IC MC14066BCP
102	EI-330392	IC MC14070BCP
103	EI-337228	IC M5218L0
104	EI-347769	IC M54514AP
105	EI-337503	IC M54532P
106	EI-347760	IC M54534P
107	EI-749829	IC M54573L (EXCEPT EK)
108	EI-348229	IC NE555
109	EI-307574	IC TA7060AP
110	EI-344921	IC TA7245P
111	EI-705494	IC TA7607AP
112	EI-337529	IC TA78L005AP
113	EI-300834	IC TC4520BP
114	EI-749828	IC UPC1391H
115	EI-337530	IC UPC574J
116	EI-345279	OSC CE CSA4.00MS 4.00000MHz
117	EI-347434	OSC X'TAL HC-18/U 4.194304MHz
118	EI-348543	OSC X'TAL HC-18/U 10.240000MHz
119	EI-327364	OSC X'TAL HC-33/U 4.435571MHz
120	EI-309878	OSC X'TAL 4.433619MHz
121	EJ-301513	⚠ SOCKET INLET S-I6453 E 2P (J901)
122	EO-346887	C S-FIX H ECR-HA070M11
123	EO-330240	COIL FIX 1 EL0606SKI 47μH K
124	EO-348206	COIL VARI 1 YBTKNS-28929Z 2.20μH
125	EO-347785	COIL VARI 1 15.6kHz
126	EO-347786	COIL VARI 1 70 kHz
127	EO-330256	OSC CE F85-006 4MHz
128	EP-345264	SOLENOID W/TAP VS-4
129	ER-742497	⚠ R FUSE 1/4W 220J
130	ER-345114	FILTER BP LJ20BP 4.43MHz×0.3 4.43MC
131	ER-324339	FILTER LC AP LCB-56
132	ER-324375	FILTER LC BP LCB-57 4.43MHz
133	ER-325807	FILTER LC BP LCB-61 5.06MHz
134	ER-330465	FILTER LC DST310-55B271M
135	ER-324305	FILTER LC HP LCB-53
136	ER-324398	FILTER LC LP LCB-58
137	ER-324469	FILTER LC LP LCB-59
138	ER-348142	FILTER LP LJ25LP 3.4MHz×4
139	ER-345113	FILTER LP LF25LP3.4MHz×3
140	ER-348368	FILTER LP LPF1.50
141	ER-348367	FILTER LP LPF500
142	ES-347911	⚠ SW PUSH ESB-8213V 01-1 (SW901)
143	ES-309312	⚠ SW SLIDE 00220459 02-2 (SW902)
144	ES-348089	SW LEAF MSW-1429C 01-1 NO
145	ES-348090	SW LEAF MSW-1434C 02-1 NO
146	ES-318284	SW LEVER SCL101R23A 1-01-02N
147	ES-332384	SW MICRO SS-5-F
148	ES-347790	SW SLIDE (EK, EA)
149	ES-348097	SW SLIDE (EXCEPT EK, EA)
150	ES-347755	SW TACT EVQ-QSE05T
151	ET-330533	⚠ POSISTER PTH61G04BD3R3N
152	ET-318308	PHOTO SENSOR PN202S
153	ET-330533	POSISTER PTH61G04BD3R3N
154	ET-307997	TR 2SA1115 D, E
155	ET-200479	TR 2SA1115 D, E, F
156	ET-347738	TR 2SA1282A E, F
157	ET-346806	TR 2SA1309 Q, R, S
158	ET-337569	TR 2SA675A E, F, H
159	ET-348931	TR 2SB774 R, S, T
160	ET-200401	TR 2SB788 S, T, U
161	ET-200402	TR 2SD958 S, T, U
162	ET-522270	TR 2SC1210 D
163	ET-321644	TR 2SC1213 C
164	ET-306719	TR 2SC2236 O, Y
165	ET-330464	TR 2SC2603 D, E
166	ET-200480	TR 2SC2603 D, E, F
167	ET-200985	TR 2SC2603 F, G
168	ET-742646	TR 2SC388A
169	ET-344999	TR 2SK1010 R, S, T
170	EV-307629	R S-FIX H H0621A 3P 0.30W 223
171	EV-336769	R S-FIX H H0621A 3P 0.30W 473
172	EV-336767	R S-FIX H H0621A 3P 0.30W 683
173	EV-332404	R S-FIX H H0651A 3P 0.05W 101
174	EV-307621	R S-FIX H H0651A 3P 0.05W 103
175	EV-307709	R S-FIX H H0651A 3P 0.05W 223
176	EV-332320	R S-FIX H H0651A 3P 0.05W 332
177	EV-307706	R S-FIX H H0651A 3P 0.05W 471
178	EV-346805	R S-FIX H H0811C309A 3P 222
179	EV-342939	R S-FIX H H0811C313A 3P 103
180	EV-336852	R S-FIX H KVSF807U 3P 102
181	EV-336853	R S-FIX H KVSF807U 3P 103
182	EV-336850	R S-FIX H KVSF807U 3P 202
183	EV-336847	R S-FIX H KVSF807U 3P 502
184	EV-341225	R S-FIX H KVSF807U 3P 503
185	EV-341224	R S-FIX H KVSF807V 3P 201
186	EV-336848	R S-FIX H KVSF807V 3P 301
187	EV-336851	R S-FIX H KVSF807V 3P 501
188	EV-346807	R S-FIX H KVSF817U 3P 104
189	EV-337957	R S-FIX H TM64K3 3P 0.30W 102
190	EV-702567	R S-FIX TT24R 202
191	EV-348413	R S-FIX V RVA0911 T3P 202
192	EV-749777	R S-FIX 502
193	EV-702569	SEMI-FIXED/VOL. TT24R 10KB
194	HC-347811	HEAD CTL HV225207SCD
195	HC-347163	HEAD PU TP306
196	HE-325273	HEAD E HV113201 V
197	MB-345018	BELT CAPSTAN
198	MB-780029	BELT LOADING
199	MI-327773	IDLER ASSY
200	MP-604531	ROLLER PINCH VS-2(NEW)
201	VT-328134	TENSION BAND ASSY

HEAD DRUM BLOCK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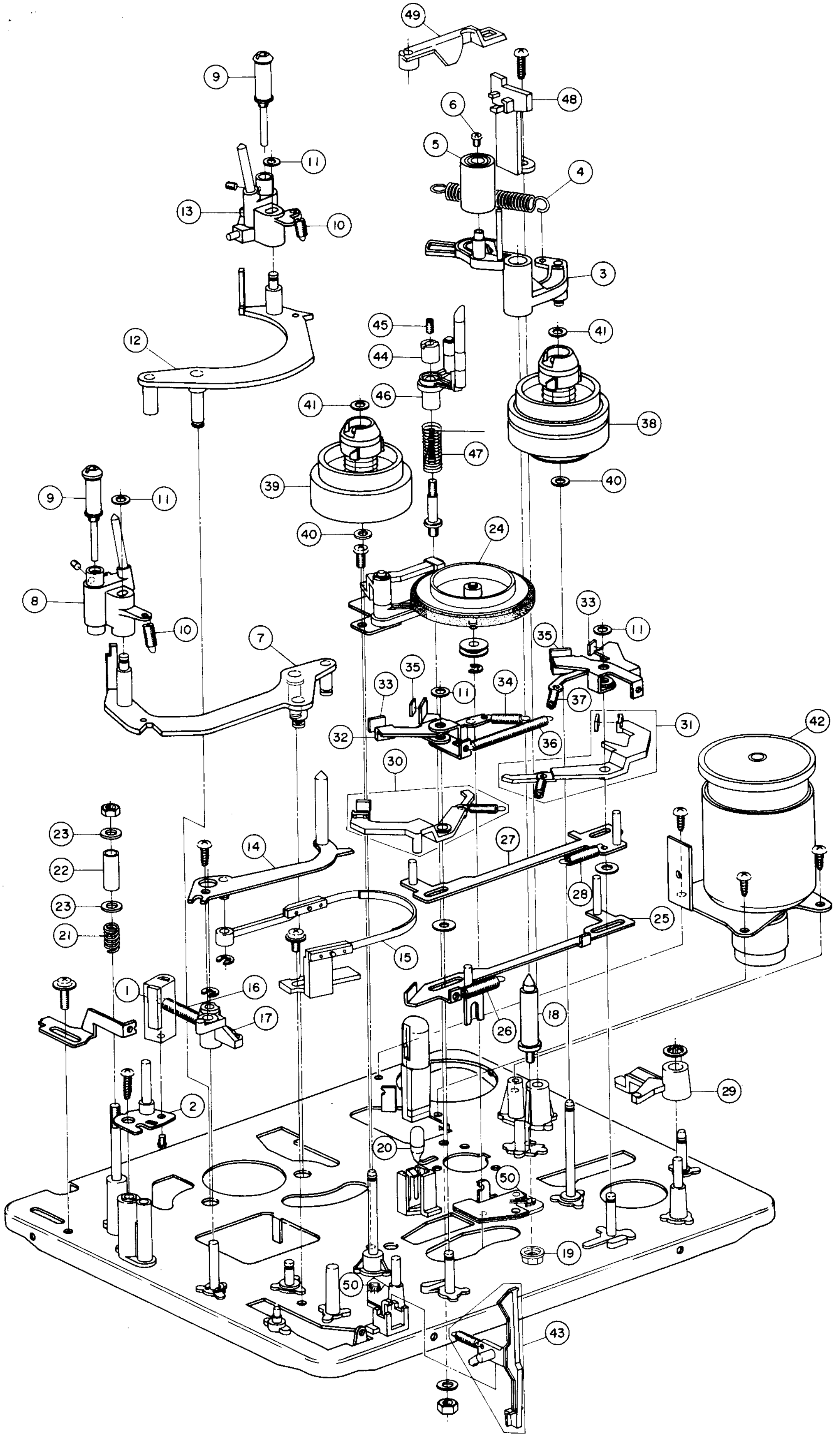
1. HEAD DRUM BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	UPPER DRUM BLOCK	
1-1	BH-V1017A170A	UPPER DRUM BLK VS-4EG
	LOWER DRUM BLOCK	
1-2	BH-V1017A160A	LOWER DRUM BLK VS-4EG
	HEAD DRUM BLOCK	
1-3	ET-348203	POSISTER PTH499D31BG500Q030
	DRUM BASE BLOCK	
1-4	ZG-331178	SP PUSH PRESS ACH
1-5	ZG-332979	SP PUSH CTL (B)
1-6	ZS-332978	SCREW ADJUST
1-7	ZG-327740	SP TORSION LZ
	ROLLER IMPEDANCE BLOCK	
1-8	MI-347812	ROLLER IMPEDANCE
1-9	BL-B327729	LEVER LZ PART
1-10	ZW-343120	PW17×040×025PSL
1-11	ZW-259334	PW2.05×035×025PSL
	A/C H BLOCK	
1-12	HC-347811	HEAD CTL HV225207SCD
1-13	HZ-343076	GUIDE TAPE (C)
1-14	HZ-342726	GUIDE TAPE (B)
1-15	ZG-328225	SP C-3.5/0.8-10.0G C-102G
1-16	ZS-380046	PAN30×10STL CMT
1-17	ZG-327757	SP PULL ACH SET
1-18	ZG-313257	SP C-3.5/0.8-8.0 C-101
	MOTOR BLM-400	
1-19	BM-B344824	ROTOR PART
	P.C DRIVE BLOCK	
1-20	HC-347163	HEAD PU TP306
1-21	BA-M3201A020A	PC DRIVE BLK BLM-400
1-IC	EI-344921	IC TA7245P
1-IC1 to 3	EI-336987	HALL ELEMENT DHD-H150

MECHA FRAME BLOCK (1)



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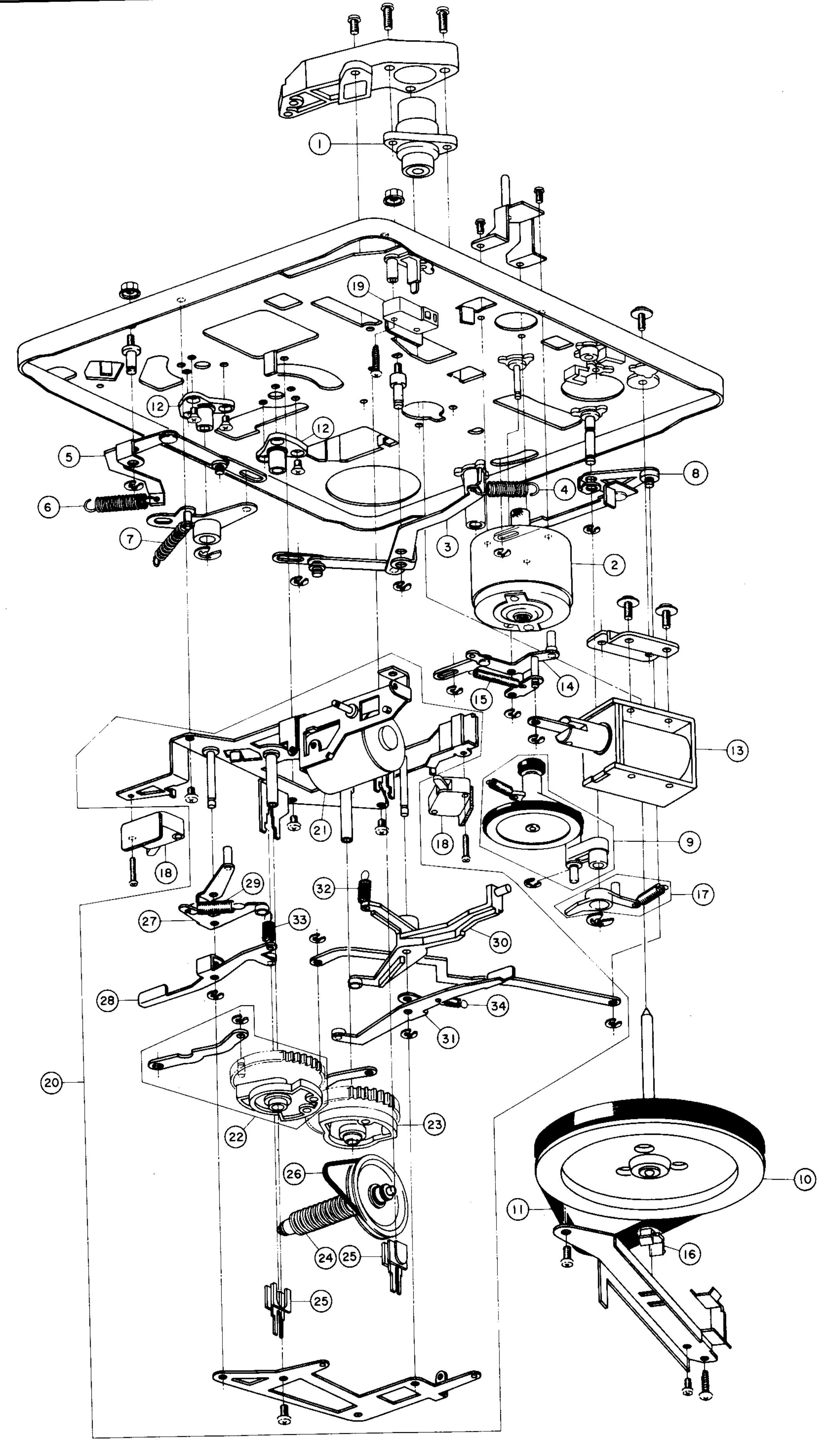
2. MECHA FRAME BLOCK (1)

REF. NO.	PARTS NO.	DESCRIPTION
2-X	BB-V1017A070A	MECHA FRAME ASSY
	HOLDER ERASE HEAD BLOCK	
2-1	HE-325273	HEAD E HV113201V
2-2	HZ-B321740	HOLDER EH PART
	LEVER PINCH ROLLER BLOCK	
2-3	BL-B326296	LEVER PINCH ROLLER PART
2-4	ZG-330058	SP T2-6.3/0.8-45 T2-202
2-5	MP-604531	ROLLER PINCH VS-2 (NEW)
2-6	ZS-477876	PAN20×03STL CMT
	LEVER LOADING (L) BLOCK	
2-7	BL-B348989	LEVER LOADING (L) PART
2-8	VT-B319445	LOADING LEADER (L) PART
2-9	VT-317947	VERTICAL POLE PART (P)
2-10	ZG-318043	SP LEADER
2-11	ZW-344643	PW26×070×025PSL
	LEVER LOADING (R) BLOCK	
2-12	BL-B348098	LEVER LOADING (R) PART
2-13	VT-B319446	LOADING LEADER (R) PART
	TENSION ARM BLOCK	
2-14	BL-B326468	LEVER TENSION PART
2-15	VT-328134	TENSION BAND ASSY
2-16	ZG-328664	SP T2-4.0/0.4-35.5 T2-118
2-17	VT-326470	HOLDER TENSION LEVER
	MECHA FRAME BLOCK	
2-18	MH-321688	PROP 9 PINCH ROLLER LEVER
2-19	ZS-609434	N FRANGE 30STL CMT
2-20	EL-332451	PL CORD 12.0V 60MA
2-21	ZG-328225	SP C-3.5/0.8-10.0G C-102G
2-22	HZ-343076	GUIDE TAPE (C)
2-23	HZ-342726	GUIDE TAPE (B)
2-24	MI-327773	IDLER ASSY
2-25	BL-B322090	LEVER BRAKE SLIDE (B) PART
2-26	ZG-313045	SP T1-5.0/0.55-25.0 T1-158
2-27	BL-B322027	LEVER BRAKE SLIDE (A) PART
2-28	ZG-332463	SP T2-3.2/0.29-20 T2-064
2-29	ML-330640	LEVER BRAKE RELEASER
2-30	BL-V1004A090A	LEVER FF BRAKE BLK VS-5EG
2-31	BL-V1004A100A	LEVER REW BRAKE BLK VS-5EG
2-32	VT-B322286	LEVER S LOADING BRAKE PART
2-33	VT-322159	SHEET BRAKE (A)
2-34	ZG-318204	SP T2-3.2/0.29-16 T2-062
2-35	VT-322203	SHEET BRAKE (B)
2-36	ZG-344132	SP PULL BRAKE
2-37	ZG-318228	SP T2-3.2/0.29-14 T2-061
2-38	BR-347731	TU REEL TABLE BLK
2-39	BR-347732	SUPPLY REEL TABLE BLK
2-40	ZW-324417	PW31×060×050PSL
2-41	ZW-344643	PW26×070×025PSL
2-42	BM-347730	MOTOR CAPSTAN JJN3B01
2-43	BL-V1004A170B	LEVER REC SAFETY BLK VS-4EG
2-44	ZS-326246	NUT ADJUST
2-45	ZS-328608	6 SET26×030SCM PKR FP
2-46	BL-B326220	LEVER REVIEW PART
2-47	ZG-326247	SP TORSION REVIEW
2-48	VT-345031	HOLDER OPENER
2-49	VT-326477	GUIDE CAP
	HALL IC BLOCK	
2-50	EI-347733	IC DN6838

MECHA FRAME BLOCK (2)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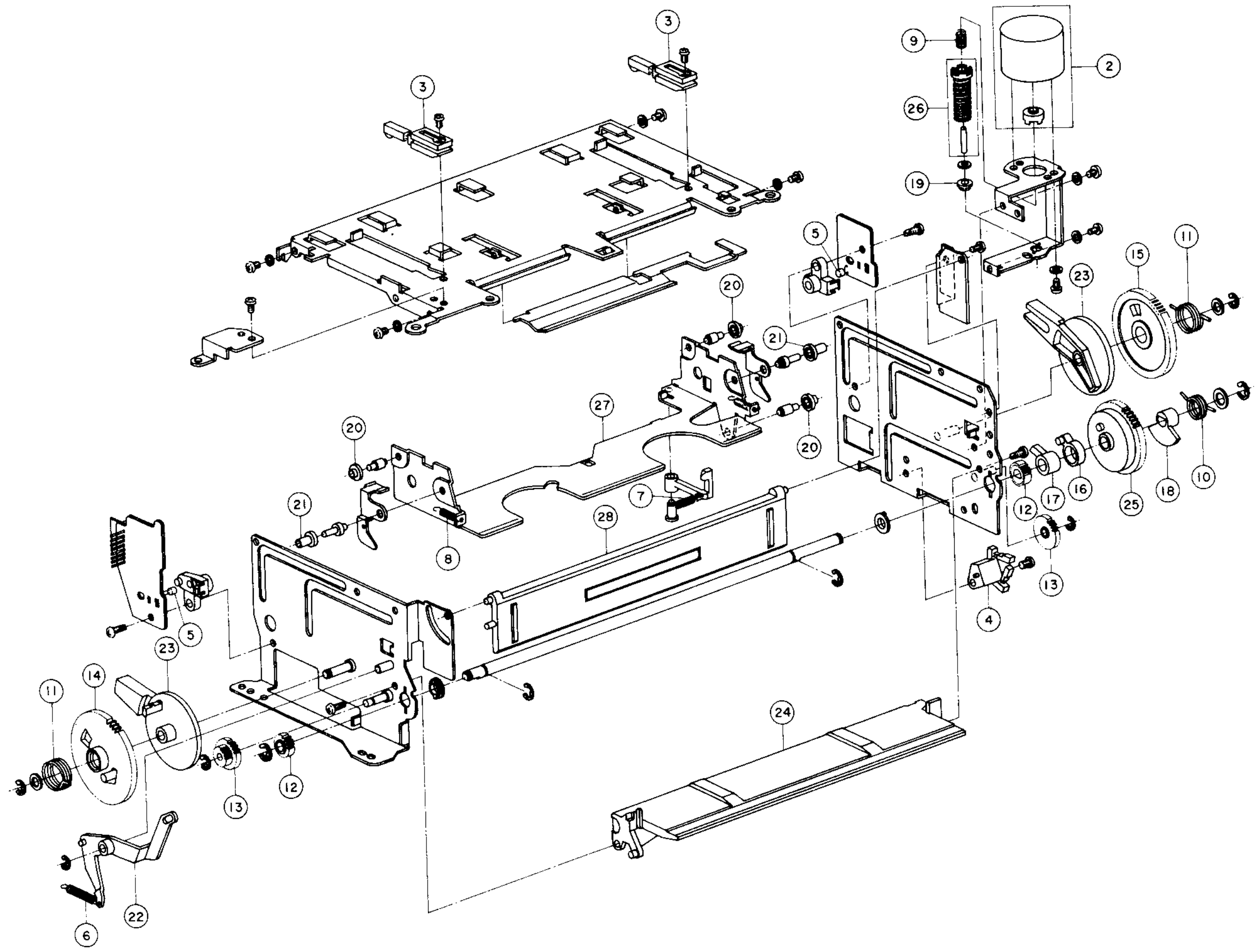
3. MECHA FRAME BLOCK (2)

REF. NO.	PARTS NO.	DESCRIPTION
	MECHA FRAME BLOCK	
3-1	MZ-B321701	HOLDER CAPSTAN PART
3-2	BM-345265	MOTOR REEL MJB5B51
3-3	BL-B326455	LEVER TOGGLE SP (B) PART
3-4	ZG-313085	SP T1-6.3/0.8-25.0 T1-197
3-5	BL-B326453	LEVER TOGGLE SP (A) PART
3-6	ZG-328610	SP T2-6.3/0.8-28 T2-198
3-7	ZG-321769	SP T2-5.0/0.55-35.5 T2-161
3-8	BL-B326464	LEVER ROLLING PART
3-9	BV-327815	TU IDLER ASSY
3-10	MI-B328611	FLYWHEEL PART
3-11	MB-345018	BELT CAPSTAN
3-12	MV-322302	METAL LOADING
	PLUNGER BLOCK	
3-13	EP-345264	SOLENOID W/TAP 1240 PLT 15V
3-14	BL-B604437	LEVER PLUNGER PART
3-15	ZG-328661	SP T2-3.2/0.29-25 T2-066
	HOLDER FLYWHEEL BLOCK	
3-16	VT-326476	HOLDER PIVOT
	LEVER TU IDLER KICK BLOCK	
3-17	BV-V1004A220A	LEVER TU IDLER KICK BLK VS-5EG
3-18	ES-318284	SW LEVER SCL101R23A 1-01-02N (SW1)
3-19	ES-332384	SW MICRO SS-5-F (SW1)
	LOADING BLOCK	
3-20	BV-V1017A250A	LOADING BLK VS-4EG
3-21	BM-749896	L MOTOR SUB ASSY (3)
3-22	VT-780025	LOADING GEAR A ASSY
3-23	VT-780026	LOADING GEAR B SUB ASSY
3-24	VT-780027	LOADING WARM ASSY
3-25	VT-749898	HOLDER GEAR SHAFT
3-26	MB-780029	BELT LOADING
3-27	BL-780030	TENSION LEVER ASSY
3-28	BL-780031	SW LEVER A ASSY
3-29	ZG-780032	SP TENSION LEVER RETURN
3-30	BL-780033	BRAKE LEVER ASSY
3-31	BL-780034	SW LEVER B ASSY
3-32	BL-780035	SP BRAKE LEVER
3-33	ZG-780039	SP SW A
3-34	ZG-780040	SP SW B

EJECTOR ASSY



4. EJECTOR ASSY

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BV-347813	EJECTOR ASSY
	EJECTOR ASSY	
4-2	BM-348088	MOTOR MMN-5C2RP
4-3	ES-348089	SW LEAF MSW-1429C 01-1 NO
4-4	ES-348090	SW LEAF MSW-1434C 02-1 NO
4-5	ET-318308	PHOTO SENSOR PN202S
4-6	ZG-312922	SP T1-3.2/0.2-10.0 T1-039
4-7	ZG-324331	SP T2-3.2/0.2-12.5 T2-041
4-8	ZG-312944	SP T1-3.2/0.29-12.5 T1-060
4-9	ZG-313212	SP C-6.5/0.6-12.5 C-057
4-10	ZG-749705	SP (A)
4-11	ZG-749695	SP (C)
4-12	ZG-749696	GEAR (A)
4-13	MZ-749692	GEAR (B)
4-14	MZ-749694	GEAR (C)
4-15	MZ-749715	GEAR (D)
4-16	MZ-749697	COLLAR BRAKE (A)
4-17	MZ-749698	COLLAR BRAKE (B)
4-18	MZ-749894	COLLAR BANANA
4-19	MZ-749895	COLLAR WARM
4-20	MR-749685	GUIDE ROLLER (A)
4-21	MR-749686	GUIDE ROLLER (C)
4-22	ML-749691	ARM COVER
4-23	ML-749693	ARM DRIVE
4-24	MZ-749855	GUIDE FRAME
4-25	MZ-749699	WARM WHEEL
4-26	MZ-749853	WARM PART
4-27	MZ-749640	HOLDER CASSETTE
	FINAL ASSEMBLY BLOCK	
4-28EG	SP-349117A	MASK VS-4EG (EXCEPT EG-G, EG-M)
4-28EG-G	SP-349117B	MASK VS-4EG-G
4-28EG-M	SP-349117D	MASK VS-4EG-M

5. VIDEO P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1EG	BA-V1017A180A	PC VIDEO BLK VS-4EG (EG, EO, EG-M, EO-P)
5-1EK	BA-V1017A180B	PC VIDEO BLK VS-4EK
5-1EA	BA-V1017A180C	PC VIDEO BLK VS-4EA
5-1EG-G	BA-V1017A180D	PC VIDEO BLK VS-4EG-G
5-IC1	EI-324204	IC AN6310
5-IC2	EI-322309	IC HA11703
5-IC3	EI-324151	IC AN6360
5-IC4	EI-324160	IC AN6362
5-IC5	EI-324182	IC AN6371
5-IC6	EI-324203	IC AN6342N
5-IC7	EI-328593	IC HD14053BP
5-IC8	EI-310183	IC MC14001BCP
5-IC9	EI-310038	IC MC14025BCP
5-IC10	EI-347781	IC LA6393D
5-IC301	EI-347763	IC AN6326
5-IC302	EI-347764	IC AN6307
5-IC303	EI-307574	IC TA7060AP
5-IC304	EI-337529	IC TA78L005AP
5-TR1 to 5	ET-200985	TR 2SC2603 F, G
5-TR6	ET-200479	TR 2SA1115 D, E, F
5-TR7	ET-200985	TR 2SC2603 F, G
5-TR8, 9	ET-200479	TR 2SA1115 D, E, F
5-TR10	ET-200985	TR 2SC2603 F, G
5-TR11	ET-200479	TR 2SA1115 D, E, F
5-TR12, 13	ET-200985	TR 2SC2603 F, G
5-TR14	ET-321644	TR 2SC1213 C
5-TR15	ET-200985	TR 2SC2603 F, G
5-TR16	ET-200480	TR 2SC2603 D, E, F
5-TR17, 18	ET-200985	TR 2SC2603 F, G
5-TR19	ET-200479	TR 2SA1115 D, E, F
5-TR20	ET-344999	TR 2SD1010 R, S, T
5-TR21 to 23	ET-200985	TR 2SC2603 F, G
5-TR24	ET-348931	TR 2SB774 R, S, T
5-TR25, 26	ET-200985	TR 2SC2603 F, G
5-TR27, 28	ET-200479	TR 2SA1115 D, E, F
5-TR29	ET-200985	TR 2SC2603 F, G
5-TR30	ET-344999	TR 2SD1010 R, S, T
5-TR31	ET-200479	TR 2SA1115 D, E, F
5-TR32	ET-200985	TR 2SC2603 F, G
5-TR33	ET-200479	TR 2SA1115 D, E, F
5-TR34 to 39	ET-200985	TR 2SC2603 F, G
5-TR40	ET-200480	TR 2SC2603 D, E, F (EXCEPT EK, EA)
5-TR41 to 44	ET-200985	TR 2SC2603 F, G
5-TR301 to 315	ET-200985	TR 2SC2603 F, G
5-D1, 2	ED-337575	D SILICON H GMA-01-4-BT T26
5-D3, 4	ED-523427	D SILICON H 1SS16
5-D5	ED-200468	D SILICON V DS448-VB6 (EG-G)
5-D6, 7	ED-523427	D SILICON H 1SS16
5-D8 to 14	ED-337575	D SILICON H GMA-01-4-BT T26
5-D15	ED-200468	D SILICON V DS448-VB6 (EXCEPT EK, EA)
5-D17 to 19	ED-337575	D SILICON H GMA-01-4-BT T26
5-WD1 to 4	ED-347768	D SILICON V MC921
5-SW1	ES-348097	SW SLIDE 00120323 2-02-03 (EXCEPT EK, EA)
5-SW1	ES-347790	SW SLIDE 00120289 (EK, EA)
5-VR1	EV-336847	R S-FIX H KVSF807U 3P 502
5-VR2	EV-336848	R S-FIX H KVSF807V 3P 301
5-VR3, 4	EV-336847	R S-FIX H KVSF807U 3P 502
5-VR5	EV-336852	R S-FIX H KVSF807U 3P 102
5-VR6	EV-336847	R S-FIX H KVSF807U 3P 502
5-VR7	EV-336852	R S-FIX H KVSF807U 3P 102
5-VR8	EV-336853	R S-FIX H KVSF807U 3P 103
5-VR9	EV-337957	R S-FIX H TM64K3 3P 0.30W 102
5-VR10	EV-341224	R S-FIX H KVSF807V 3P 201
5-VR11	EV-336850	R S-FIX H KVSF807U 3P 202
5-VR12	EV-336852	R S-FIX H KVSF807U 3P 102
5-VR13	EV-348413	R S-FIX V RVA0911 T3P 202
5-VR301	EV-336851	R S-FIX H DVSF807V 3P 501
5-L1	EO-330240	COIL FIX 1 EL0606SKI 47μH K
5-L2	EO-330241	COIL FIX 1 EL0606SKI 220μH K
5-L3	EO-330249	COIL FIX 1 EL0606SKI 8.2μH K
5-L4, 5	EO-330248	COIL FIX 1 EL0606SKI 33μH K
5-L6, 7	EO-330241	COIL FIX 1 EL0606SKI 220μH K
5-L8	EO-345870	COIL FIX 1 EL0606SKI 15.00μH K
5-L9	EO-330242	COIL FIX 1 EL0606SKI 39μH K
5-L10	EO-330246	COIL FIX 1 EL0606SKI 56μH K
5-L11 to 13	EO-330241	COIL FIX 1 EL0606SKI 220μH K
5-L14	EO-330246	COIL FIX 1 EL0606SKI 56μH K
5-L15	EO-330241	COIL FIX 1 FL0606SKI 220μH K
5-L16	EO-318383	COIL FIX 1 FL07H 6.8MH J
5-L17	EO-330241	COIL FIX 1 FL0606SKI 220μH K
5-L18	EO-330252	COIL FIX 1 EL0606SKI 100μH K
5-L19	EO-330240	COIL FIX 1 EL0606SKI 47μH K
5-L20	EO-330246	COIL FIX 1 EL0606SKI 56μH K
5-L21	EO-330241	COIL FIX 1 EL0606SKI 220μH K
5-L22	EO-345867	COIL FIX 1 EL0606SKI 12.00μH K
5-L23, 24	EO-330241	COIL FIX 1 EL0606SKI 220μH K
5-L301	EO-243977	COIL FIX 1 EL07H 1MH J
5-L302	EO-345871	COIL FIX 1 EL0606SKI 18.00μH J
5-L303	EO-345865	COIL FIX 1 EL0606SKI 10.00μH J
5-L304	EO-345881	COIL FIX 1 EL0606SKI 100.00μH J
5-L305	EO-345893	COIL FIX 1 EL0606SKI 470μH J
5-L306, 307	EO-330249	COIL FIX 1 EL0606SKI 8.2μH K
5-L308	EO-345872	COIL FIX 1 EL0606SKI 22.00μH J
5-L309	EO-345866	COIL FIX 1 EL0606SKI 12.00μH J
5-L310, 311	EO-330245	COIL FIX 1 EL0606SKI 10μH K
5-L312	EO-345872	COIL FIX 1 EL0606SKI 22.00μH J
5-L313	EO-345874	COIL FIX 1 EL0606SKI 33.00μH J
5-L314, 315	EO-330241	COIL FIX 1 EL0606SKI 220μH K
5-L316	EO-345881	COIL FIX 1 EL0606SKI 100.00μH J
5-L317	EO-345874	COIL FIX 1 EL0606SKI 33.00μH J
5-L318	EO-345861	COIL FIX 1 EL0606SKI 3.30μH K
5-FL1	ER-324305	FILTER LC HP LCB-53
5-FL2	ER-345113	FILTER LP LJ25LP3.4MHz×3
5-FL3	ER-324339	FILTER LC AP LCB-56
5-FL4	ER-348142	FILTER LP LJ25LP 3.4MHz×4
5-FL5	ER-324469	FILTER LC LP LCB-59
5-FL6	ER-324375	FILTER LC BP LCB-57 4.43MHz
5-FL7	ER-345114	FILTER BP LJ20BP 4.43MHz×0.3 4.43 MC
5-FL8	ER-324398	FILTER LC LP LCB-58
5-FL9	ER-325807	FILTER LC BP LCB-61 5.06MHz
5-DL1	EI-337468	DL EFD-JR124A13D
5-DL301	EI-322365	DL EFD-EN645A11E
5-X1	EI-309878	OSC X'TAL 4.433619MHz
5-X2	EI-327364	OSC X'TAL HC-33/U 4.435571 MHz
5-VC1	EC-346764	C S-FIX H ECR-HA020D11 4-20
5-VC2, 3	EC-346765	C S-FIX H ECR-HA010A11 2.8-10
5-VC301, 302	EO-346887	C S-FIX H ECR-HA070M11
5-C87	EC-200949	C EC V F05 NP SM 470M 10DC
5-C94	EC-337793	C MY V F05 AMZ 182J 50DC
5-C96	EC-332052	C EC V F05 NP SM 4R7M 35DC
5-JA	EJ-347787	JACK PLATE VS-4AUDIO T5896 (PIN JACK)
5-JV	EJ-347788	JACK PLATE VIDEO YKC 21-5055 (PIN JACK)

6. SERVO AND AUDIO P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-V1017A190A	PC SERVO AUDIO BLK VS-4EG
6-IC1	EI-326044	IC AN6350
6-IC2	EI-304475	IC MC14066BCP
6-IC3	EI-337228	IC M5218L0
6-IC4, 5	EI-257602	IC MC14011BCP
6-IC6	EI-310183	IC MC14001BCP
6-IC7	EI-347778	IC BA6209
6-IC8	EI-321604	IC AN6341N
6-IC9	EI-300834	IC TC4520BP
6-IC10, 11	EI-347779	IC LA6393S
6-IC201	EI-347780	IC LA7045
6-TR1, 2	ET-200985	TR 2SC2603 F, G
6-TR3	ET-200479	TR 2SA1115 D, E, F
6-TR4 to 6	ET-200985	TR 2SC2603 F, G
6-TR7	ET-200479	TR 2SA1115 D, E, F
6-TR8 to 10	ET-200985	TR 2SC2603 F, G
6-TR11	ET-200479	TR 2SA1115 D, E, F
6-TR12, 13	ET-200985	TR 2SC2603 F, G
6-TR201, 202	ET-200402	TR 2SD958 S, T, U
6-TR203	ET-200401	TR 2SB788 S, T, U
6-TR204	ET-200985	TR 2SC2603 F, G
6-TR205	ET-200479	TR 2SA1115 D, E, F
6-TR206 to 209	ET-200985	TR 2SC 2603 F, G
6-TR210	ET-344999	TR 2SD1010 R, S, T
6-D1	ED-348205	D SILICON V MC931
6-D2	ED-337575	D SILICON H GMA-01-4-BT T26
6-D3	ED-347768	D SILICON V MC921
6-D4	ED-347767	D SILICON V MC911
6-D5	ED-200468	D SILICON V DS448-VB6
6-D6 to 12	ED-337575	D SILICON H GMA-01-4-BT T26
6-D201	ED-331667	D ZENER H HZ7 A1
6-VR1	EV-336769	R S-FIX H H0621A 3P 0.30W 473
6-VR2	EV-336767	R S-FIX H H0621A 3P 0/30W 683
6-VR3, 4	EV-336769	R S-FIX H H0621A 3P 0.30W 473
6-VR5	EV-307629	R S-FIX H H0621A 3P 0.30W 223
6-VR6	EV-307621	R S-FIX H H0651A 3P 0.05W 103
6-VR7	EV-307709	R S-FIX H H0651A 3P 0.05W 223
6-VR8	EV-307621	R S-FIX H H0651A 3P 0.05W 103
6-VR208	EV-346807	R S-FIX H KVSF817U 3P 104
6-VR209	EV-346805	R S-FIX H H0811C309A 3P 222
6-VR210, 211	EV-342939	R S-FIX H H0811 C313A 3P 103
6-L1, 2	EO-669273	COIL FIX 2 FL5R200 18μH
6-L202	EO-243977	COIL FIX 1 FL07H 1MH J
6-L204	EO-321254	COIL FIX 1 FL07H 5.60MH J
6-FL1, 2	ER-330465	FILTER LC DST310-55B271M
6-FL201	EO-347785	COIL VARI 1 15.6kHz
6-FL202, 203	EO-347786	COIL VARI 1 70kHz
6-OSC1	EO-347791	COIL OSC 1 0512033
6-R8	ER-346779	R MF V CUT 1/4W 7502F
6-R26	ER-338215	R MF H T26 1/8W 6202F
6-R27	ER-346780	R MF V CUT 1/4W 6800F
6-R28	ER-349037	R MF V CUT 1/4W 1001F
6-R55	ER-333350	R CB H SNP FS RDS 1/4W 5R6J
6-R62	ER-346791	R MF V CUT 1/4W 1803F
6-C209	EC-325054	C STY V T05 500 331J 50DC

7. OPERATION P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
7-1EG	BA-V1017A060A	PC OPERATION BLK VS-4EG (EG, EG-M)
7-1EK	BA-V1017A060B	PC OPERATION BLK VS-4EK
7-1EA	BA-V1017A060C	PC OPERATION BLK VS-4EA
7-1EO	BA-V1017A060D	PC OPERATION BLK VS-4EO (EO, EO-P)
7-1EG-G	BA-V1017A060F	PC OPERATION BLK VS-4EG-G

OPERATION P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
7-IC2	EI-347773	IC MB88303M
7-IC3	EI-347759	IC MB88401-207K (EXCEPT EG-G)
7-IC3G	EI-348737	IC MB88401-210K (EG-G)
7-TR1 to 4	ET-200479	TR 2SA1115 D, E, F
7-D1 to 5	ED-624903	D SILICON H 1S2473
7-D7, 8	ED-316143	D SILICON H 1S2473HS F10
7-D9	ED-523427	D SILICON H 1SS16
7-D12	ED-347776	D LED BG5608S GRN
7-D13	ED-249377	D LED GL3AR1 RED
7-D14	ED-347776	D LED BG5608S GRN
7-D15	ED-347777	D LED BR5628S RED
7-D16	ED-249377	D LED GL3AR1 RED
7-D17, 18	ED-347777	D LED BR5628S RED
7-D19	ED-283138	D LED GL3PG1 GRN
7-D20, 22	ED-249377	D LED GL3AR1 RED
7-D26	ED-249377	D LED GL3AR1 RED
7-SW1 to 23	ES-347755	SW TACT EVQ-QSE05T
7-SW28	ES-347755	SW TACT EVQ-QSE05T (EA ONLY)
7-VR1	EV-307706	R S-FIX H H0651A 3P 0.05W 471
7-X1	EO-330256	OSC CE F85-006 4MHz
7-IB1	ER-347736	R COMP RKC 1/8 B15 4.7K J
7-IB2	ER-347737	R COMP RKC 1/8 B16 4.7K J

LED P.C BOARD (EXCEPT EO)

REF. NO.	PARTS NO.	DESCRIPTION
7-D10	ED-347775	D LED SL2179-01 GRN

LED P.C BOARD (EO)

REF. NO.	PARTS NO.	DESCRIPTION
7-D11	ED-348462	D LED SL2221T GRN

ANT SW P.C BOARD (EA ONLY)

REF. NO.	PARTS NO.	DESCRIPTION
7-TR101	ET-200479	TR 2SA1115 D, E, F
7-TR102	ET-200480	TR 2SC2603 D, E, F
7-TR103	ET-200479	TR 2SA1115 D, E, F
7-TR104	ET-200480	TR 2SC2603 D, E, F
7-D101, 102	ED-624903	D SILICON H 1S2473

8. POWER SUPPLY AND SYSTEM CONTROL P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1EG	BA-V1017A050A	PC POWER SYSCON BLK VS-4EG (EG, EG-G, EK, EG-M)
8-1EA	BA-V1017A050B	PC POWER SYSCON BLK VS-4EO (EA, EO, EO-P)
8-IC1	EI-347757	⚠ IC STK5325
8-IC2	EI-347758	⚠ IC TA78012AP
8-IC3	EI-337530	IC UPC574J
8-IC4	EI-315243	⚠ IC TA78005P
8-IC5	EI-345133	IC MB88401-206M
8-IC6	EI-257602	IC MC14011BCP
8-IC7	EI-337519	IC MB88301-A
8-IC8	EI-347760	IC M54534P
8-IC9	EI-347779	IC LA 6393S
8-TR1	ET-337569	TR 2SA675A E, F, H
8-TR2	ET-306719	TR 2SC2236 O, Y
8-TR3 to 5	ET-200985	TR 2SC2603 F, G
8-TR6	ET-200479	TR 2SA1115 D, E, F
8-TR7	ET-344999	TR 2SD1010 R, S, T
8-TR8	ET-200985	TR 2SC2603 F, G
8-TR9	ET-306719	TR 2SC2236 O, Y
8-TR10, 11	ET-200985	TR 2SC2603 F, G
8-TR12	ET-200479	TR 2SA1115 D, E, F
8-TR13 to 15	ET-347738	TR 2SA1282A E, F
8-TR16, 17	ET-200985	TR 2SC2603 F, G
8-D1	ED-337618	D SILICON DS135E-FB6 100/1.0A
8-D2, 3	ED-624903	D SILICON H 1S2473
8-D4	ED-337617	⚠ D SILICON DBB50C-K8 200/5.0A
8-D5	ED-322238	⚠ D SILICON 1B4B41 100/1.0A
8-D6	ED-337618	D SILICON DS135E-FB6 100/1.0A
8-D7	ED-346468	D ZENER H HZ9FA F10 B1
8-D8 to 14	ED-624903	D SILICON H 1S2473
8-D15	ED-346515	D ZENER H HZ30FA F10 1
8-D17 to 19	ED-624903	D SILICON H 1S2473
8-X1	EI-345279	OSC CE CSA4.00MS 4.00000MHz
8-X2	EI-347434	OSC X'TAL HC-18/U 4.194304MHz
8-TH1	ET-330533	POSISTER PTH61G04BD3R3N
8-SF5, 6	EF-346880	⚠ FUSE ICP-F15 150V 0.6A
8-SF7, 8	EF-347968	⚠ FUSE ICP-F10 150V 0.4A
8-IB1	ER-347743	R COMP RKC 1/8 B4 10K J
8-IB2	ER-347744	R COMP NO. 15113
8-R34	ER-337563	R MF H F10 1/4W 4751F
8-R35	ER-337563	R MF H F10 1/4W 4751F
8-R36	ER-348233	R MF H F10 1/4W 2371F
8-C38	EC-345111	C TT V EF 1R5M 50DC
8-F1	EF-691007	⚠ FUSE SEMKO T 250V 3.15A
8-F2	EF-601301	⚠ FUSE SEMKO T 250V 2.00A
8-F3	EF-593706	⚠ FUSE SEMKO T 250V 0.50A
8-F4	EF-668474	⚠ FUSE SEMKO T 250V 0.40A

9. SKEW JUMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
9-1	BA-V1017A290A	PC SKEW JUMP BLK VS-4EG
9-IC1	EI-348220	IC BA7022
9-IC3	EI-348229	IC NE555
9-IC4	EI-698703	IC MC14013BCP
9-IC5	EI-330392	IC MC14070BCP
9-IC6	EI-341516	IC AN6041
9-IC7	EI-307616	IC AN608P
9-IC8	EI-341516	IC AN6041
9-IC9	EI-307616	IC AN608P
9-IC10	EI-348229	IC NE555
9-IC11	EI-337529	IC TA78L005AP
9-IC12	EI-348222	IC BA7001
9-IC14	EI-348222	IC BA7001
9-IC15	EI-307616	IC AN608P
9-TR1, 2	ET-200985	TR 2SC2603 F, G
9-TR3	ET-200479	TR 2SA1115 D, E, F
9-TR5 to 9	ET-200985	TR 2SC2603 F, G
9-TR12 to 15	ET-200985	TR 2SC2603 F, G
9-TR17	ET-200985	TR 2SC2603 F, G
9-D1 to 4	ED-337575	D SILICON H GMA-01-4-BT T26
9-D5	ED-348042	D ZENER V HZ9C-1S1
9-D6	ED-301911	D SILICON H DS448
9-VR1 to 3	EV-336852	R S-FIX H KVSF807U 3P 102
9-VR4	EV-341225	R S-FIX H KVSF807U 3P 503
9-VR5	EV-332320	R S-FIX H H0651A 3P 0.05W 332
9-VR6	EV-332404	R S-FIX H H0651A 3P 0.05W 101
9-VL1	EO-348206	COIL VARI 1 YBTKANS-28929Z 2.20μH
9-L1	EO-330244	COIL FIX 1 EL0606SKI 2.2μH K
9-L2	EO-330242	COIL FIX 1 EL0606SKI 39μH K
9-L3 to 6	EO-330249	COIL FIX 1 EL0606SKI 8.2μH K
9-L7, 8	EO-330252	COIL FIX 1 EL0606SKI 100μH K
9-FL1	EI-348223	DL MS-26H H-2K
9-FL2	EI-348224	DL MS-26 (H-3K)
9-FL3	EI-348225	DL MS-19 (L-11)
9-FL4	ER-348367	FILTER LP LPF500
9-FL5	ER-348368	FILTER LP LPF1.50
9-X1	EI-348543	OSC X'TAL HC-18/U 10.240000MHz

10. MECHA DRIVE P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
10-1	BA-V1017A200A	PC MECHA DRIVE BLK VS-4EG
10-IC1	EI-347766	IC MBL8243M
10-IC2	EI-347769	IC M54514AP
10-IC3	EI-337503	IC M54532P
10-IC4 to 6	EI-330352	IC BA6109
10-TR1 to 3	ET-346806	TR 2SA1309 Q, R, S
10-TR4, 6	ET-330464	TR 2SC2603 D, E
10-TR7	ET-347738	TR 2SA1282A E, F
10-TR8, 9	ET-346806	TR 2SA1309 Q, R, S
10-D1, 2	ED-624903	D SILICON H 1S2473
10-D3, 4	ED-337575	D SILICON H GMA-01-4-BT T26
10-D5	ED-347899	D ZENER H HZ20CP
10-D6	ED-624903	D SILICON H 1S2473
10-D7	ED-347767	D SILICON V MC911
10-D8	ED-347768	D SILICON V MC921
10-D9	ED-337575	D SILICON H GMA-01-4-BT T26
10-D10	ED-346637	D ZENER H HZ3FA F10 C2
10-D11	ED-347768	D SILICON V MC921
10-D14, 15	ED-624903	D SILICON H 1S2473
10-D16	ED-324937	D ZENER H 05Z6.8 Z
10-D17	ED-624903	D SILICON H 1S2473
10-TH1	ET-330533	⚠ POSISTER PTH61G04BD3R3N
10-IB1	ER-347735	R COMP M-3724
10-R34	ER-306127	R CB H S15 FS RDS 1/2W 681J
10-R36	ER-333065	R OMF H SNP FS 2W 220J

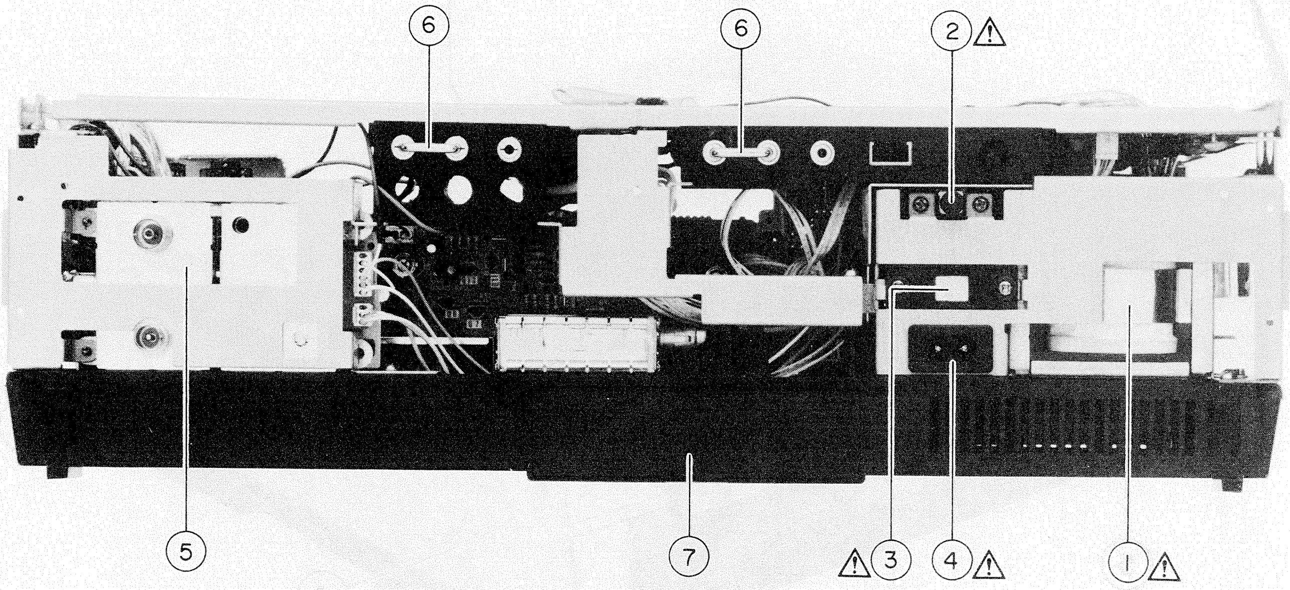
11. DEMODULATOR P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
11-1EG	BA-V1017A260A	PC DE-MODULATOR BLK VS-4EG (EG, EG-G, EG-M)
11-1EK	BA-V1017A260B	PC DE-MODULATOR BLK VS-4EK
11-1EA	BA-V1017A260C	PC DE-MODULATOR BLK VS-4EA
11-1EO	BA-V1017A260D	PC DE-MODULATOR BLK VS-4EO (EO, EO-P)
11-2EG	EE-345115	TV TUNER CDE1-A04 (EG, EG-G, EG-M)
11-2EK	EE-345116	TV TUNER CBE1-013 (EK)
11-2EA	EE-345117	TV TUNER CSE1-017 (EA)
11-2EO	EE-345118	TV TUNER CEE1-009 (EO, EO-P)
11-IC1	EI-705494	IC TA7607AP
11-IC2	EI-749828	IC UPC1391H
11-IC3	EI-749829	IC M54573L (EXCEPT EK)
11-Q1	ET-742646	TR 2SC388A
11-Q2 to 4	ET-330464	TR 2SC2603 D, E
11-Q5	ET-522270	TR 2SC1210 D
11-Q6	ET-307997	TR 2SA1115 D, E
11-Q7	ET-330464	TR 2SC2603 D, E
11-Q8	ET-307997	TR 2SA1115 D, E
11-Q9, 10	ET-330464	TR 2SC2603 D, E
11-Q11	ET-330464	TR 2SC2603 D, E
11-Q12	ET-307997	TR 2SA1115 D, E (EO ONLY)
11-Q13	ET-330464	TR 2SC2603 D, E
11-D1	ED-604541	D SILICON H 1S2076
11-D2,3	ED-604541	D SILICON H1S2076 (EXCEPT EK)
11-D4	ED-705479	D SILICON 1SV70
11-D5 to 7	ED-604541	D SILICON H 1S2076
11-VR1, 2	EV-749777	R S-FIX 502
11-VR3	EV-702567	R S-FIX TT24R 202
11-VR4	EV-702569	RS-FIX TT24R 10KB
11-L1	EV-707836	COIL FIX 1 144LZ 0.39 μH K
11-L2EG	EO-742653	COIL RF 144LY 2.0 μH K (EXCEPT EK)
11-L2EK	EO-742654	COIL RF 144LY 2.2 μH K (EK)
11-L3EG	EO-749830	COIL RF 199KNAS-12593Z (EXCEPT EA)
11-L3EA	EO-749831	COIL RF 199KNAS-12594Z (EA)
11-L4	EO-742574	COIL RF P320190
11-L5EG	EO-705491	COIL TKXNS-279789NK (EXCEPT EA)
11-L5EA	EO-749843	COIL BTKXNS-28428NK (EA)
11-L6	EO-749833	COIL FIX LRL06 820K
11-L7, 8	EO-749834	COIL FIX LAL06 120K
11-L9	EO-749835	COIL FIX LAL06 101K
11-L10EG	EO-749834	COIL FIX LAL06 120K (EXCEPT EK)
11-L10EK	EO-749836	COIL FIX LRL06 100K (EK)
11-L12	EO-749837	COIL FIX LAL06 330K
11-CF1EG	EH-742662	FILTER SAW SAF38.9MZ51Z (EXCEPT EK, EA)
11-CF1EK	EH-742663	FILTER SAW SAF39.5MZ51Z (EK)
11-CF1EA	EH-742664	FILTER SAW SAF36.9MZ51Z (EA)
11-CF2EG	EH-749839	FILTER CE TPS 5.5MD (EXCEPT EK)
11-CF2EK	EH-749840	FILTER CE TPS 6.0MD (EK)
11-CF3EG	EH-705499	FILTER CE SFE5.5MHz (EXCEPT EK)
11-CF3EK	EH-705500	FILTER CE SFE 6MHz (EK)
11-CF4EG	EH-749841	FILTER CE 5.5MC19A (EXCEPT EK)
11-CF4EK	EH-749842	FILTER CE 6.0MC19A (EK)
11-R44	ER-742497	⚠ R FUSE 1/4W 220J
11-R54, 55	ER-749775	R MF RNL 1/4W 4571F
11-R56	ER-749776	R MF RNL 1/4W 2401F
11-C20	EC-749821	C TT R47M 35V
11-C28	EC-749822	C EC 102M 10V
11-C33	EC-749823	C PP 1H 153J 50DC
11-C39	EC-749824	C PP 1H683K 50DC
11-C41 to 44	EC-749825	C PP 1H683J 50DC
11-C45	EC-749826	C TT R68M 35V
11-C51	EC-749827	C PP 1H 103K 50DC (EO ONLY)

12. POWER FILTER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
12-F901	EF-623103	⚠ FUSE SEMKO T 250V 1.00A
12-C901	EF-338411	⚠ C CE V FZ 103P 400AC

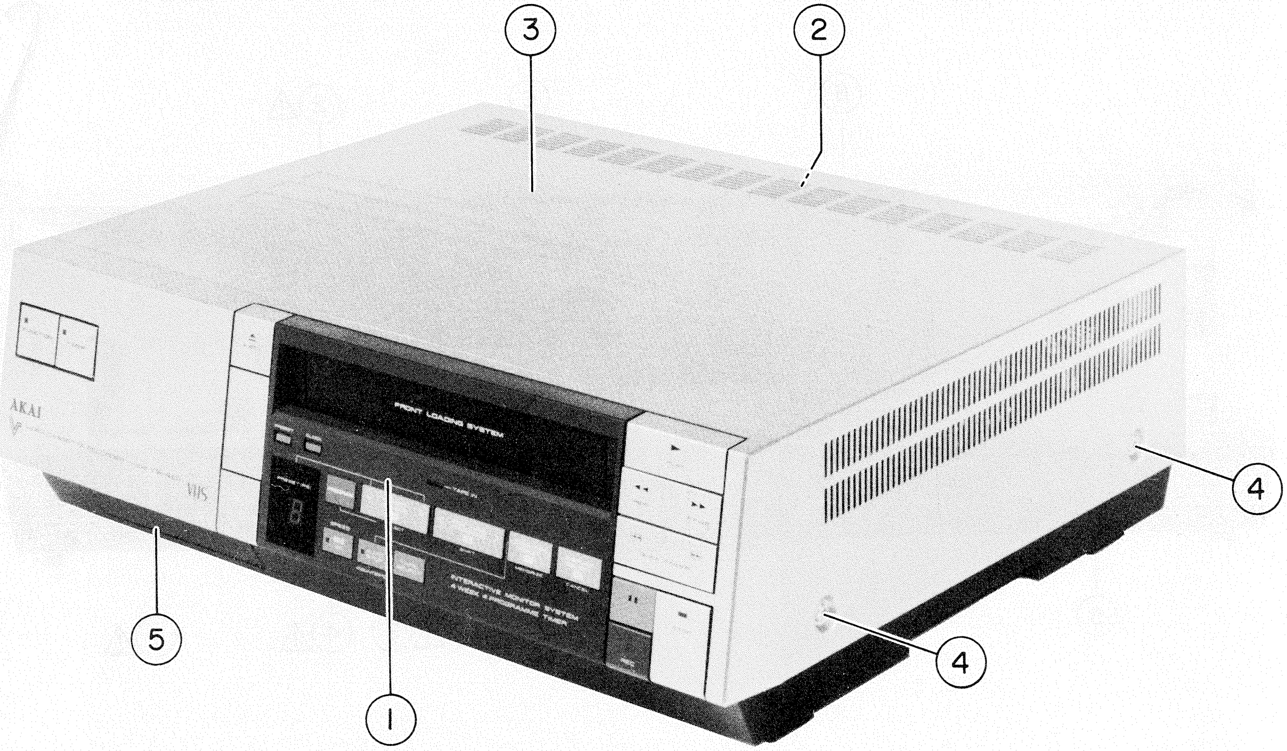
POWER AND RF BLOCK



13. POWER AND RF BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	POWER TRANS BLOCK	
13-1EG	BT-347997	⚠ TRANS POWER VS-4-5A (T901) (EXCEPT EK, EA)
13-1EK	BT-348517	⚠ TRANS POWER VS-4-6A (T901) (EK, EA)
13-2	ES-347911	⚠ SW PUSH ESB-8213V 01-1 (SW901)
13-3	ES-309312	⚠ SW SLIDE 00220459 02-2 (SW902)
13-4	EJ-301513	⚠ SOCKET INLET S-I6453 E 2P (J901)
	RF BOOSTER BLOCK	
13-5EG	BV-345124	RF MODULATOR MDW3-253 (EG, EG-G, EG-M)
13-5EK	BV-345125	RF MODULATOR MIW3-253 (EK)
13-5EA	BV-345129	RF MODULATOR MSW2-633 (EA)
13-5EO	BV-345126	RF MODULATOR MSW3-253 (EO, EO-P)
13-6	EJ-348218	PLUG SHORT PIN P2138
13-7	SP-343189	HOLDER BATTERY

FINAL ASSEMBLY BLOCK



14. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
14-1EG	BD-B345033	PANEL FRONT EG PART
14-1EG-G	BD-B345033F	PANEL FRONT EG-G PART
14-1EK	BD-B345033C	PANEL FRONT EK PART
14-1EA	BD-B345033B	PANEL FRONT EA PART
14-1EO	BD-B345033E	PANEL FRONT EO PART
14-1EG-M	BD-B345033G	PANEL FRONT EG-M PART
14-1EO-P	BD-B345033H	PANEL FRONT EO-P PART
14-2EG	SP-345055	PANEL REAR VS-4EG/EG-M
14-2EG-G	SP-345055H	PANEL REAR VS-4 EG-G
14-2EK	SP-345055C	PANEL REAR VS-4EK
14-2EA	SP-345055B	PANEL REAR VS-4EA
14-2EO	SP-345055D	PANEL REAR VS-4EO
14-3EG	SP-345054	CASE UPPER (EXCEPT EG-M, EO-P)
14-3EG-M	SP-345054B	CASE UPPER EG-M
14-3EO-P	SP-345054C	CASE UPPER EO-P
14-4	ZS-321783	ST BID40×10STL NI3
14-5	SP-343188	COVER FRONT JACK
14-6XEG	EW-347673	⚠ AC CORD 2CORES SP22-12460/CEE (EXCEPT EK, EA)
14-6XEK	EW-302995	⚠ AC CORD 2CORES VM-0112 B (EK)
14-6XEA	EW-322401	⚠ AC CORD 2 CORES SP22-12460/CEE (EXCEPT EK, EA)
14-7X	AV-V1017A330A	BATTERY PACK BLK VS-4EG

II. REMOTE CONTROL UNIT RC-V404

1. TRANSMITTER RC-T4

REF. NO.	PARTS NO.	DESCRIPTION
1-1	AV-749976	TRANSMITTER RC-T4-E (ENGLISH) (EG, EK, EA, EO)
1-2	AV-749992	TRANSMITTER RC-T4-G (GERMAN) (EG-G)
1-3	AV-749987	TRANSMITTER RC-T4-EM (ENGLISH) (EG-M)
1-4	AV-749989	TRANSMITTER RC-T4-EP (ENGLISH) (EO-P)
1-5	AV-749977	COVER BATTERY
1-6	AV-749978	RUBBER BUTTON SHEET CONTACT (ENGLISH) (EG, EK, EA, EO)
1-7	AV-749993	RUBBER BUTTON SHEET CONTACT (GERMAN) (EG-M)
1-8	AV-749988	RUBBER BUTTON SHEET CONTACT (ENGLISH) (EO-P, EG-M)
1-9	AV-749979	TERMINAL BATTERY A (+)
1-10	AV-749980	TERMINAL BATTERY B (–)
1-11	AV-749981	TERMINAL BATTERY C (+–)
1-12	AV-749982	PC SWITCH (CONTACT)
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1-D3, 4	ED-710035	D LED TLN105
1-D5	ED-780019	D LED SEL1123W

2. RECEIVER RC-R4

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2-1	AV-749986	RECEIVER RC-R4-E (ENGLISH) (EXCEPT EG-G)
2-2	AV-749994	RECEIVER RC-R4-G (GERMAN) (EG-G)
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2-TR1	IT-348898	TR FET 2SJ40 C, D, E
2-D1	ET-330238	PHOTO SENSOR302

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MZ-749694	4-14	SP-349117D	4-28EG-M	ZG-313212	4-9	ZG-749695	4-11
MZ-749697	4-16	VT-B319445	2-8	ZG-313257	1-18	ZG-749696	4-12
MZ-749698	4-17	VT-B319446	2-13	ZG-318043	2-10	ZG-749705	4-10
MZ-749699	4-25	VT-B322286	2-32	ZG-318204	2-34	ZG-780032	3-29
MZ-749715	4-15	VT-317947	2-9	ZG-318228	2-37	ZG-780035	3-32
MZ-749853	4-26	VT-322159	2-33	ZG-321769	3-7	ZG-780039	3-33
MZ-749855	4-24	VT-322203	2-35	ZG-324331	4-7	ZG-780040	3-34
MZ-749894	4-18	VT-326470	2-17	ZG-326247	2-47	ZS-321783	14-4
MZ-749895	4-19	VT-326476	3-17	ZG-327740	1-7	ZS-326246	2-44
SP-343188	14-5	VT-326477	2-49	ZG-327757	1-17	ZS-328608	2-45
SP-343189	13-7	VT-328134	2-15	ZG-328225	1-15	ZS-332978	1-6
SP-345054	14-3EG	VT-345031	2-48	ZG-328225	2-21	ZS-380046	1-16
SP-345054B	14-3EG-M	VT-749898	3-25	ZG-328610	3-6	ZS-477876	2-6
SP-345054C	14-3EO-P	VT-780025	3-22	ZG-328661	3-15	ZS-609434	2-19
SP-345055B	14-2EA	VT-780026	3-23	ZG-328664	2-16	ZW-259334	1-11
SP-345055C	14-2EK	VT-780027	3-24	ZG-330058	2-4	ZW-324417	2-40
SP-345055D	14-2EO	ZG-312922	4-6	ZG-331178	1-4	ZW-343120	1-10
SP-345055H	14-2EG-G	ZG-312944	4-8	ZG-332463	2-28	ZW-344643	2-11
SP-349117A	4-28EG	ZG-313045	2-26	ZG-332979	1-5	ZW-344643	2-41

2. REMOTE CONTROL UNIT RC-V404

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
AV-749976	1-1	AV-749989	1-4	EI-749983	1-IC1		
AV-749977	1-5	AV-749992	1-2	EI-749984	1-X1		
AV-749978	1-6	AV-749993	1-7	ET-318604	1-TR1		
AV-749979	1-9	AV-749994	2-2	ET-330238	2-D1		
AV-749980	1-10	ED-557447	1-D1	ET-348898	2TR1		
AV-749981	1-11	ED-557447	1-D2				
AV-749982	1-12	ED-710035	1-D4				
AV-749986	2-1	ED-710035	1-D3				
AV-749987	1-3	ED-780019	1-D5				
AV-749988	1-8	EI-348897	2-IC1				

VS96

SECTION 3

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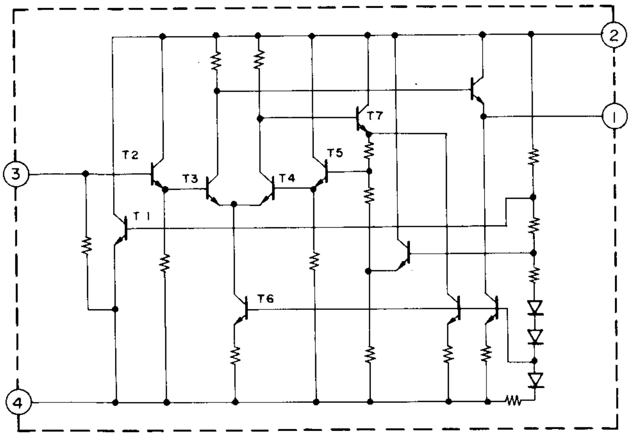
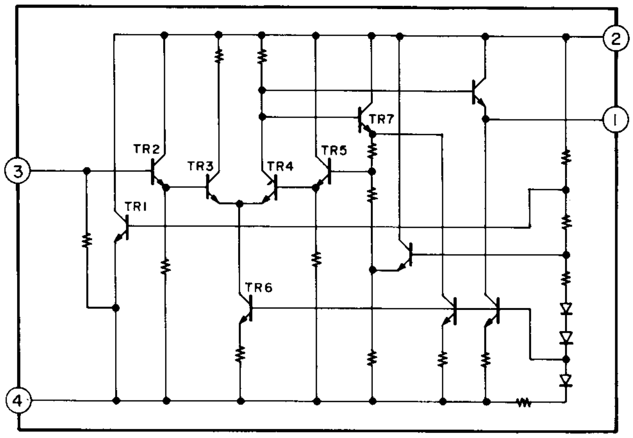
SCHEMATIC DIAGRAM OF ICs

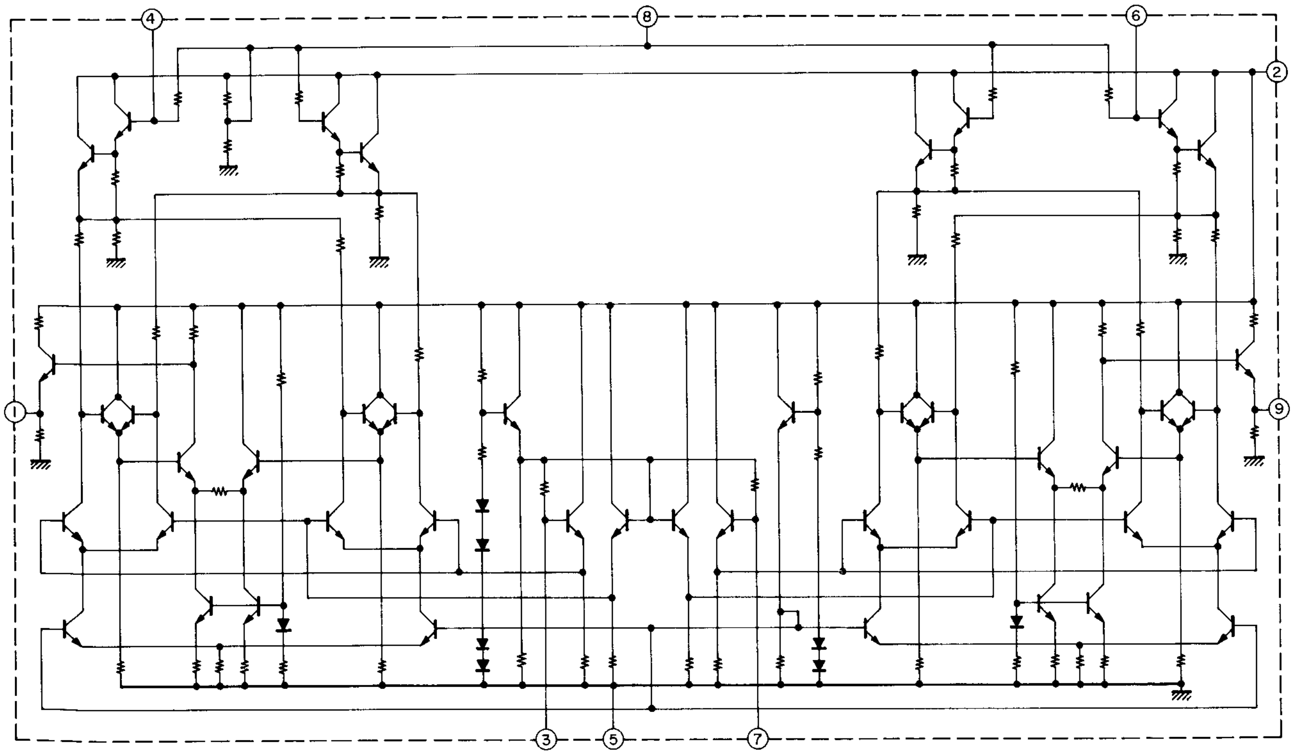
AN607P


②
①
③
④
T1
T2
T3
T4
T5
T6
T7

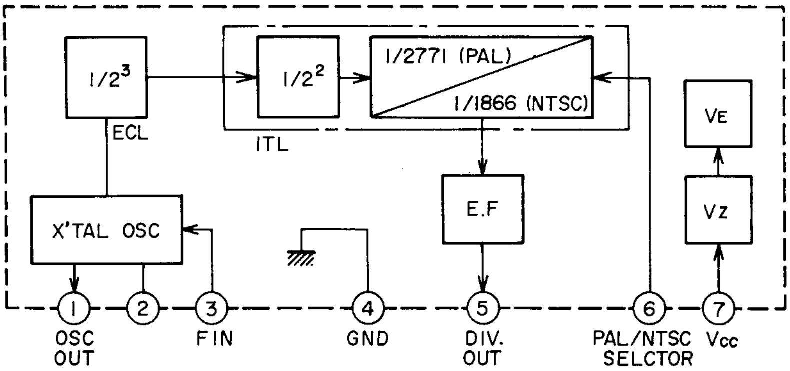
AN608P


②
①
③
④
TR1
TR2
TR3
TR4
TR5
TR6
TR7

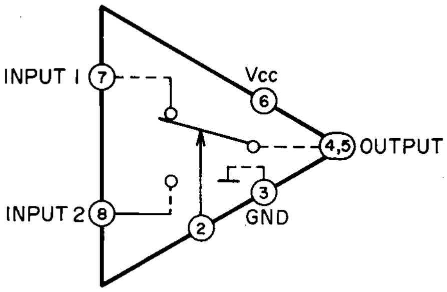
AN6041



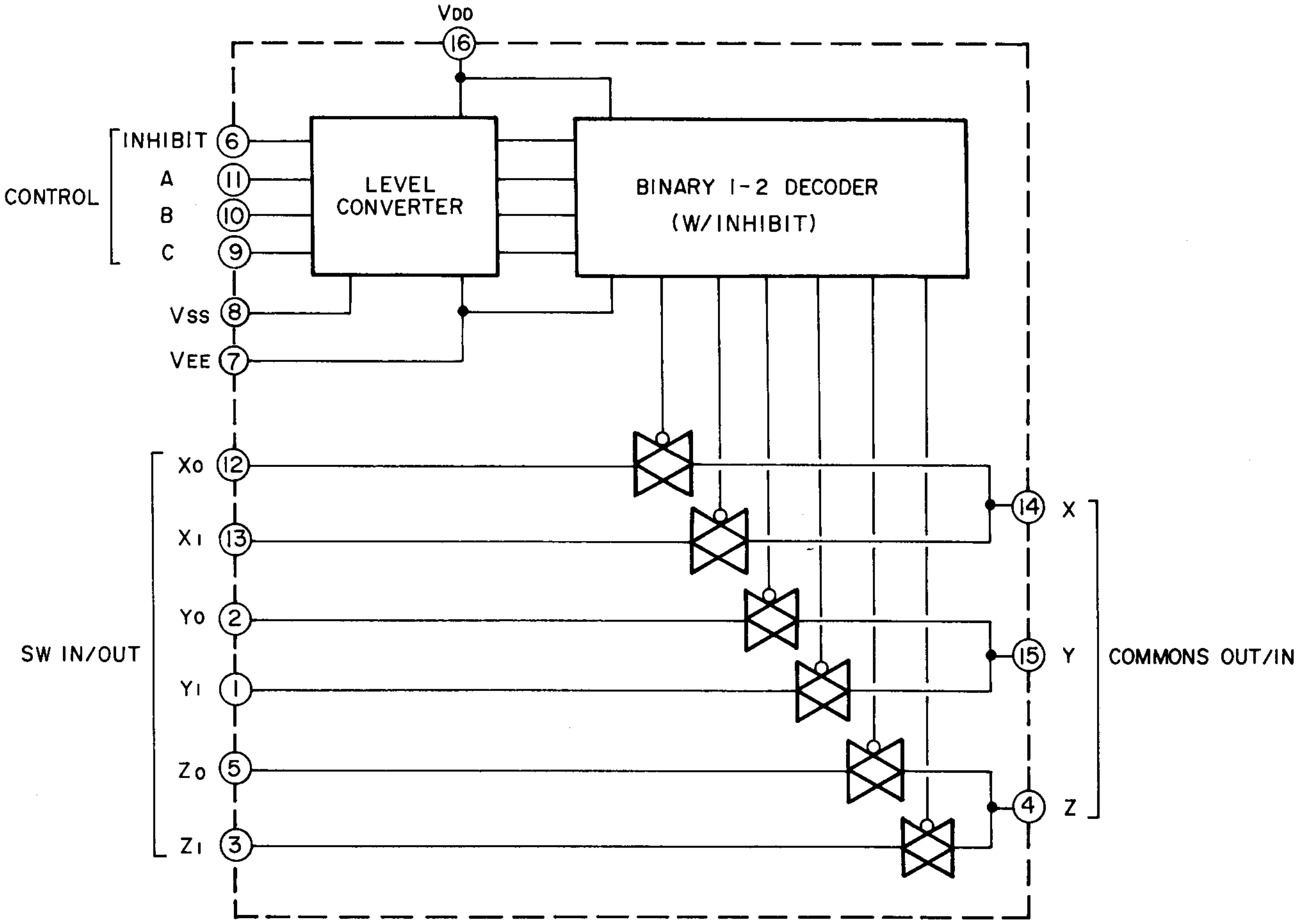
AN6342N


1/2³
ECL
1/2²
1/2771 (PAL)
1/1866 (NTSC)
ITL
VE
VZ
X'TAL OSC
E.F
1
2
3
4
5
6
7
OSC OUT
FIN
GND
DIV. OUT
PAL/NTSC SELCTOR
Vcc

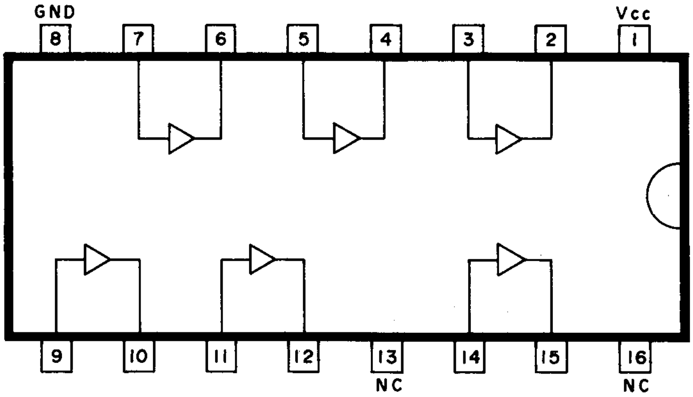
BA7001


INPUT 1
7
Vcc
6
4,5
OUTPUT
INPUT 2
8
3
GND
2

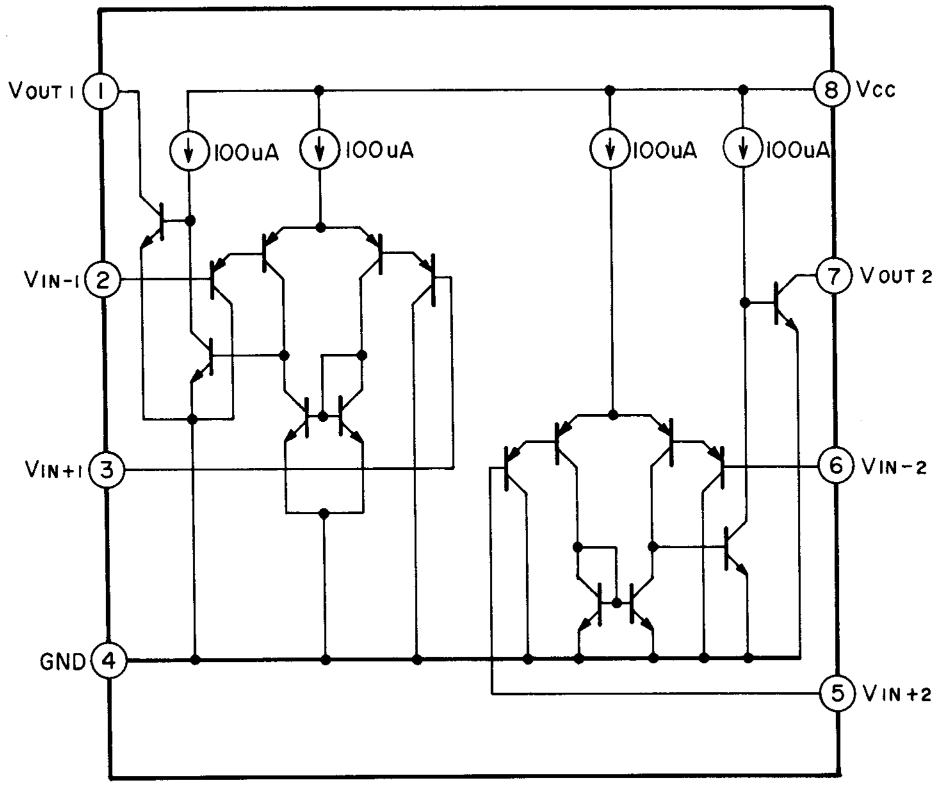
HD14053BP


VDD
16
CONTROL
INHIBIT
6
A
11
B
10
C
9
LEVEL CONVERTER
BINARY 1-2 DECODER (W/INHIBIT)
VSS
8
VEE
7
SW IN/OUT
X0
12
X1
13
Y0
2
Y1
1
Z0
5
Z1
3
14
X
15
Y
4
Z
COMMONS OUT/IN

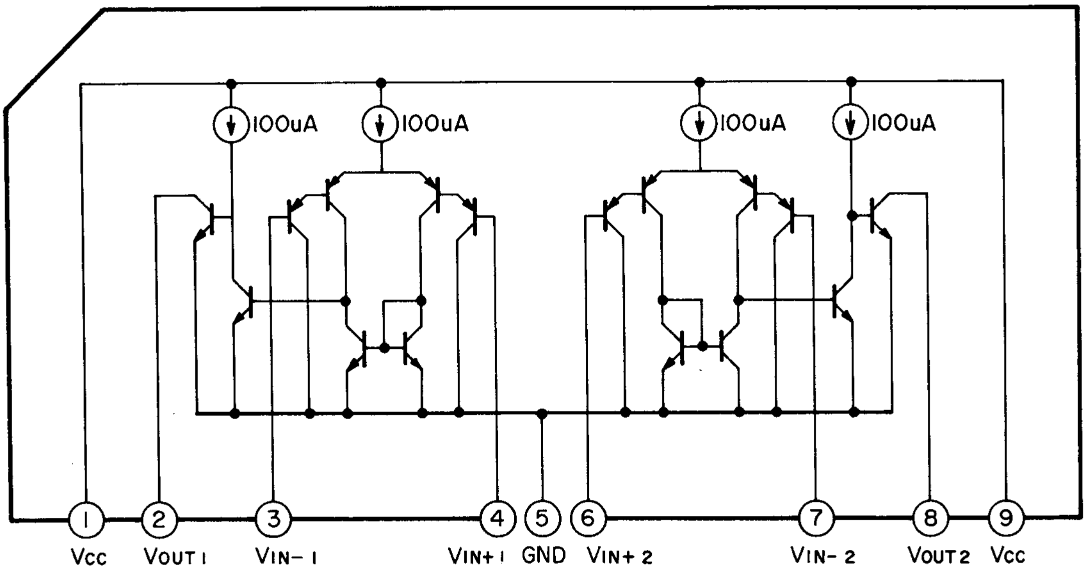
HD14050B


GND
8
7
6
5
4
3
2
Vcc
1
9
10
11
12
13
NC
14
15
16
NC

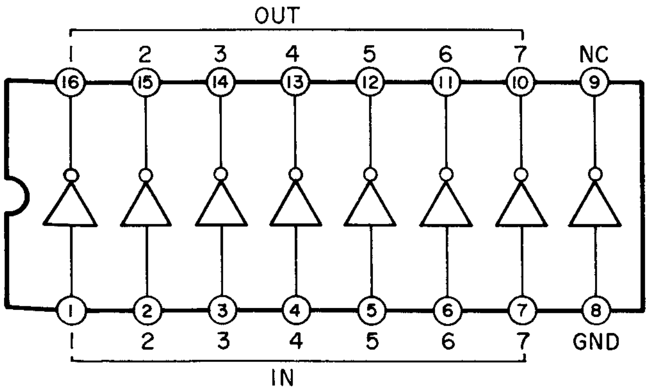
LA6393D


VOUT 1
1
8
Vcc
100uA
100uA
100uA
100uA
VIN-1
2
7
VOUT 2
VIN+1
3
6
VIN-2
GND
4
5
VIN+2

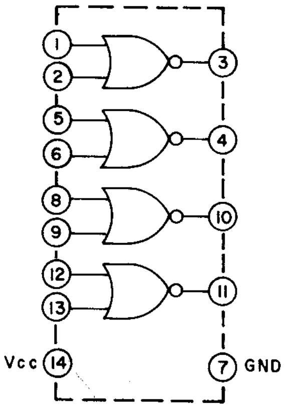
LA6393S


100uA
100uA
100uA
100uA
1
2
3
4
5
6
7
8
9
Vcc
VOUT1
VIN-1
VIN+1
GND
VIN+2
VIN-2
VOUT2
Vcc

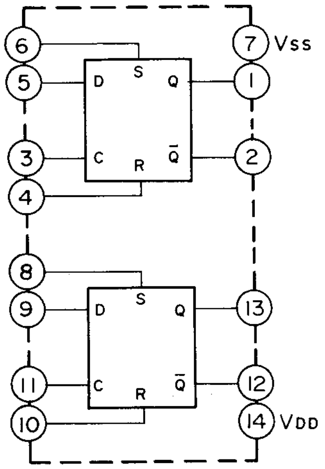
M54514AP


OUT
1
2
3
4
5
6
7
NC
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
1
2
3
4
5
6
7
GND
IN

MC14001BCP


1
2
3
5
6
4
8
9
10
12
13
11
Vcc
14
7
GND

MC14013BCP


6
5
3
4
8
9
11
10
7 Vss
1
2
13
12
14 VDD
D
S
Q
C
R
Q̄
D
S
Q
C
R
Q̄

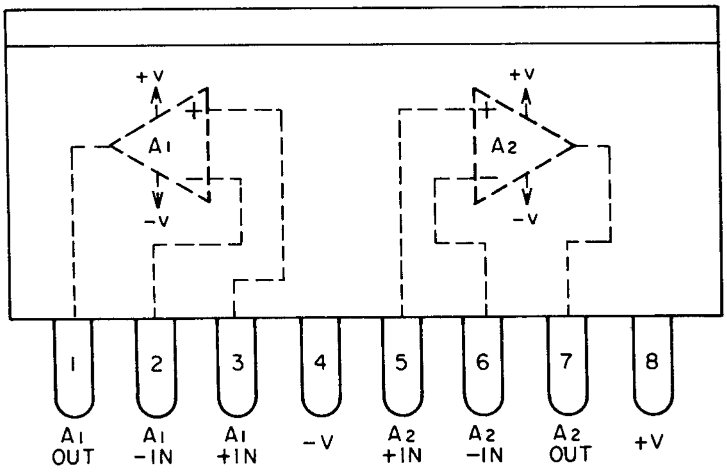
TRUTH TABLE

INPUTS				OUTPUTS		
CLOCK†	DATA	RESET	SET	Q	Q̄	
↑	0	0	0	0	1	
↑	1	0	0	1	0	
↓	X	0	0	Q	Q̄	NO CHANGE
X	X	1	0	0	1	
X	X	0	1	1	0	
X	X	1	1	1	1	

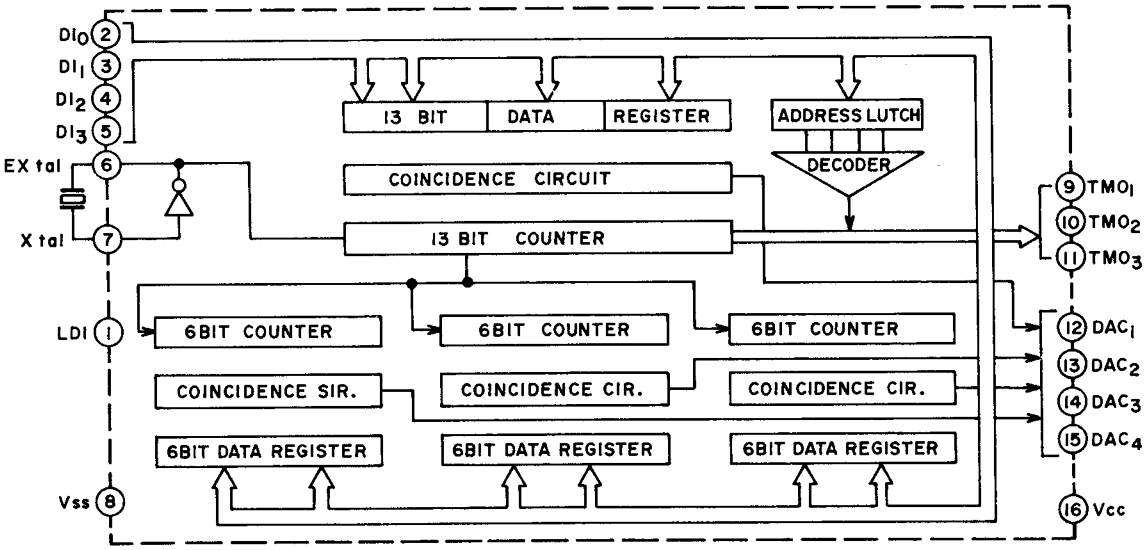
X : DON'T CARE

† : LEVEL CHANGE

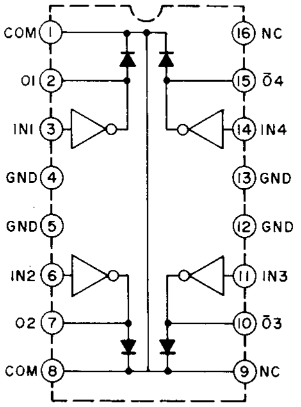
M5218LO

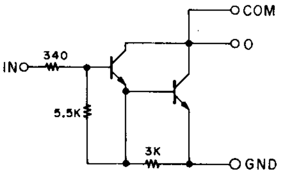

+V
+
A1
−
−V
+V
+
A2
−
−V
1
2
3
4
5
6
7
8
A1 OUT
A1 −IN
A1 +IN
−V
A2 +IN
A2 −IN
A2 OUT
+V

MB88301P


DI0 2
DI1 3
DI2 4
DI3 5
EX tal 6
X tal 7
LDI 1
Vss 8
13 BIT
DATA
REGISTER
ADDRESS LUTCH
DECODER
COINCIDENCE CIRCUIT
13 BIT COUNTER
6BIT COUNTER
6BIT COUNTER
6BIT COUNTER
COINCIDENCE SIR.
COINCIDENCE CIR.
COINCIDENCE CIR.
6BIT DATA REGISTER
6BIT DATA REGISTER
6BIT DATA REGISTER
9 TMO1
10 TMO2
11 TMO3
12 DAC1
13 DAC2
14 DAC3
15 DAC4
16 Vcc

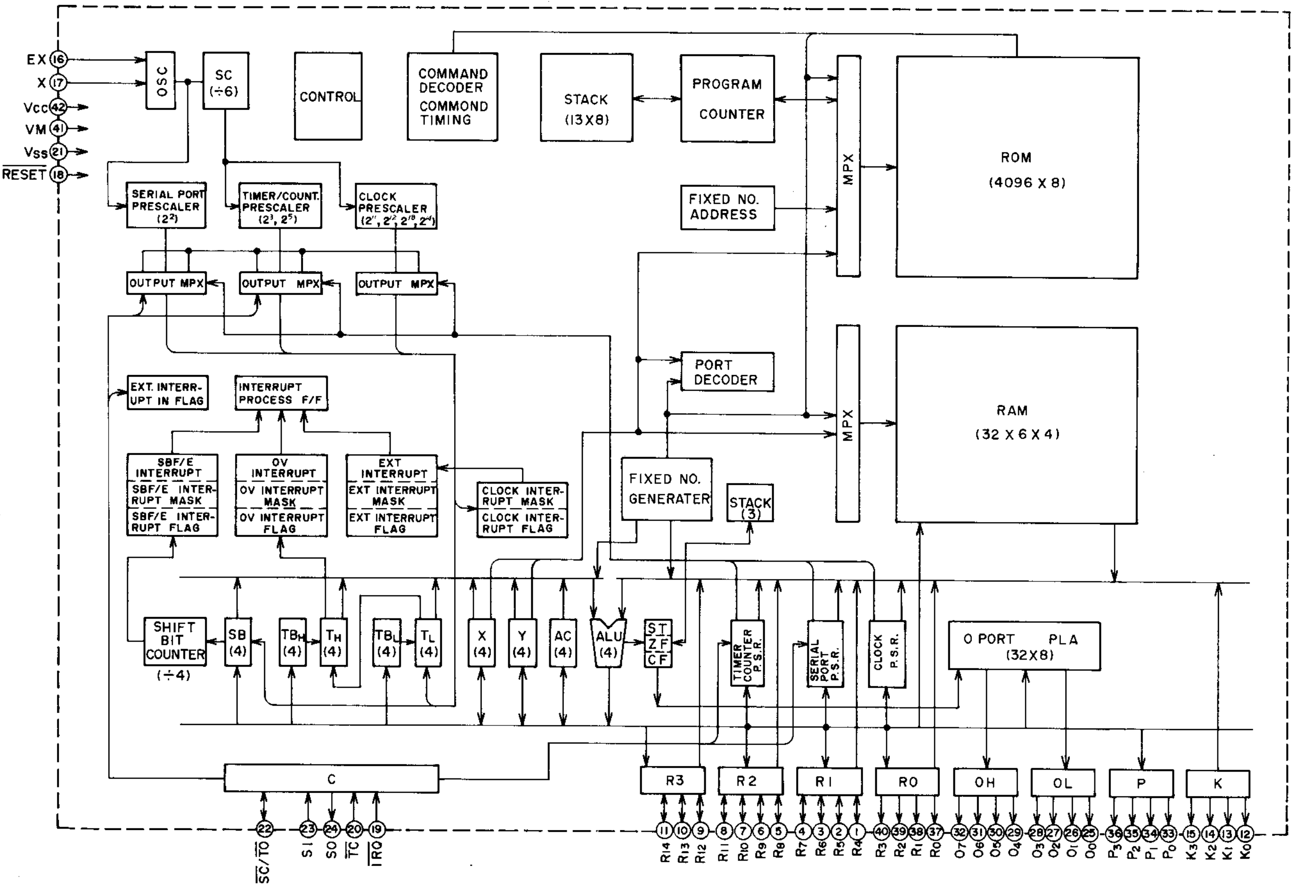
M54532P


COM 1
O1 2
IN1 3
GND 4
GND 5
IN2 6
O2 7
COM 8
NC 16
Ō4 15
IN4 14
GND 13
GND 12
IN3 11
Ō3 10
NC 9


COM
O
IN
340
5.5K
3K
GND

ALL GND CONECTED IN INSIDE

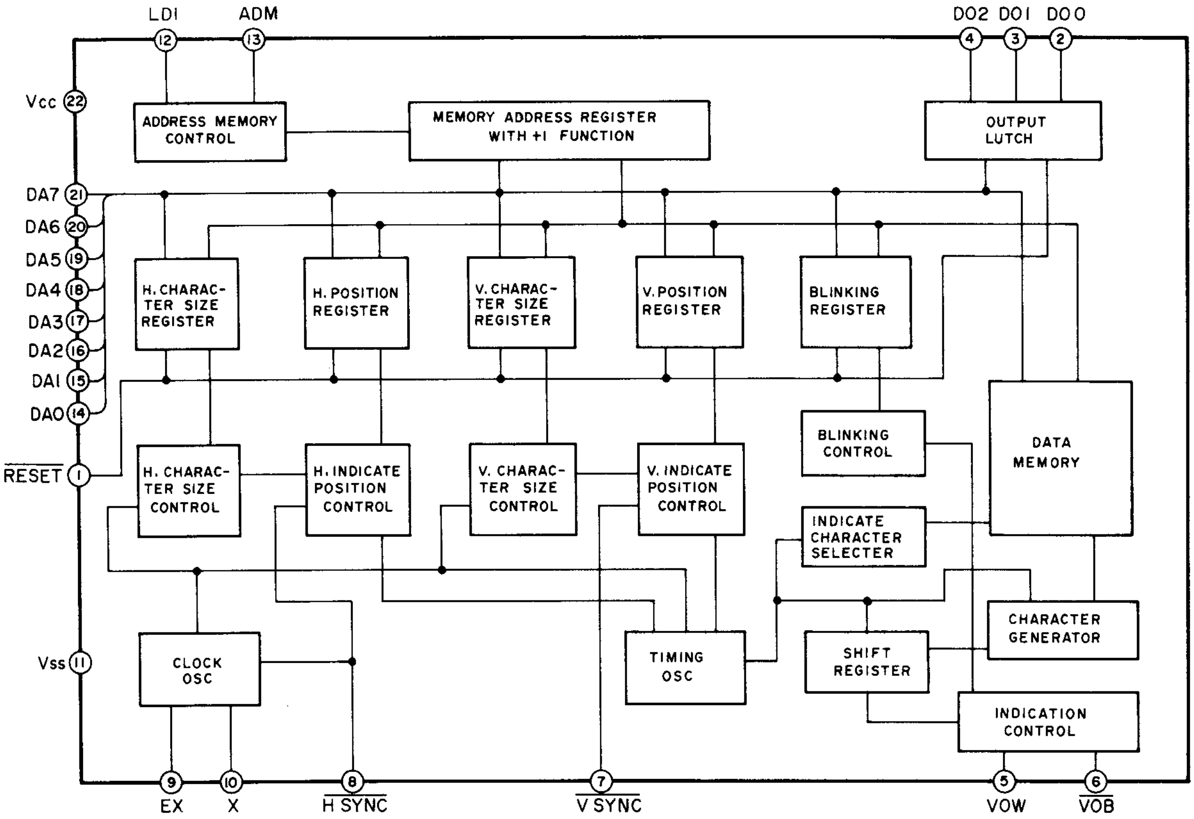
MB88401-206M/MB88401-207K


EX 16
X 17
Vcc 42
VM 41
Vss 21
RESET 18
OSC
SC (÷6)
CONTROL
COMMAND DECODER COMMOND TIMING
STACK (13X8)
PROGRAM COUNTER
MPX
ROM (4096 X 8)
FIXED NO. ADDRESS
SERIAL PORT PRESCALER (2²)
TIMER/COUNT. PRESCALER (2³, 2⁵)
CLOCK PRESCALER (2¹¹, 2¹², 2¹³, 2¹⁴)
OUTPUT MPX
OUTPUT MPX
OUTPUT MPX
PORT DECODER
MPX
RAM (32 X 6 X 4)
EXT. INTERR-UPT IN FLAG
INTERRUPT PROCESS F/F
SBF/E INTERRUPT
SBF/E INTER-RUPT MASK
SBF/E INTER-RUPT FLAG
OV INTERRUPT
OV INTERRUPT MASK
OV INTERRUPT FLAG
EXT INTERRUPT
EXT INTERRUPT MASK
EXT INTERRUPT FLAG
CLOCK INTER-RUPT MASK
CLOCK INTER-RUPT FLAG
FIXED NO. GENERATER
STACK (3)
SHIFT BIT COUNTER (÷4)
SB (4)
TBH (4)
TH (4)
TBL (4)
TL (4)
X (4)
Y (4)
AC (4)
ALU (4)
ST ZF CF
TIMER COUNTER P.S.R.
SERIAL PORT P.S.R.
CLOCK P.S.R.
O PORT PLA (32X8)
C
R3
R2
R1
R0
OH
OL
P
K
22 SC/TO
23 SI
24 SO
20 TC
19 IRQ
11 R14
10 R13
9 R12
8 R11
7 R10
6 R9
5 R8
4 R7
3 R6
2 R5
1 R4
40 R3
39 R2
38 R1
37 R0
32 O7
31 O6
30 O5
29 O4
28 O3
27 O2
26 O1
25 O0
36 P3
35 P2
34 P1
33 P0
15 K3
14 K2
13 K1
12 K0

Description of IC(MB88401-206k) Terminals		
Pin No.	Symbol	Description
1 2 3 4	DATA I/0	○ DATA output to DAC IC7 (MB88301A) and input/output of EXPANDER IC1 (MBL8243) of MECH DRIVE PCB.
5	B DOWN	○ At "L" level all the motors and plangers are turned off, and turn in the state of Function -OFF.
6	NTSC	○ At "C" level, DATA display of the tape remainings is switched into DATA for NTSC. (not used)

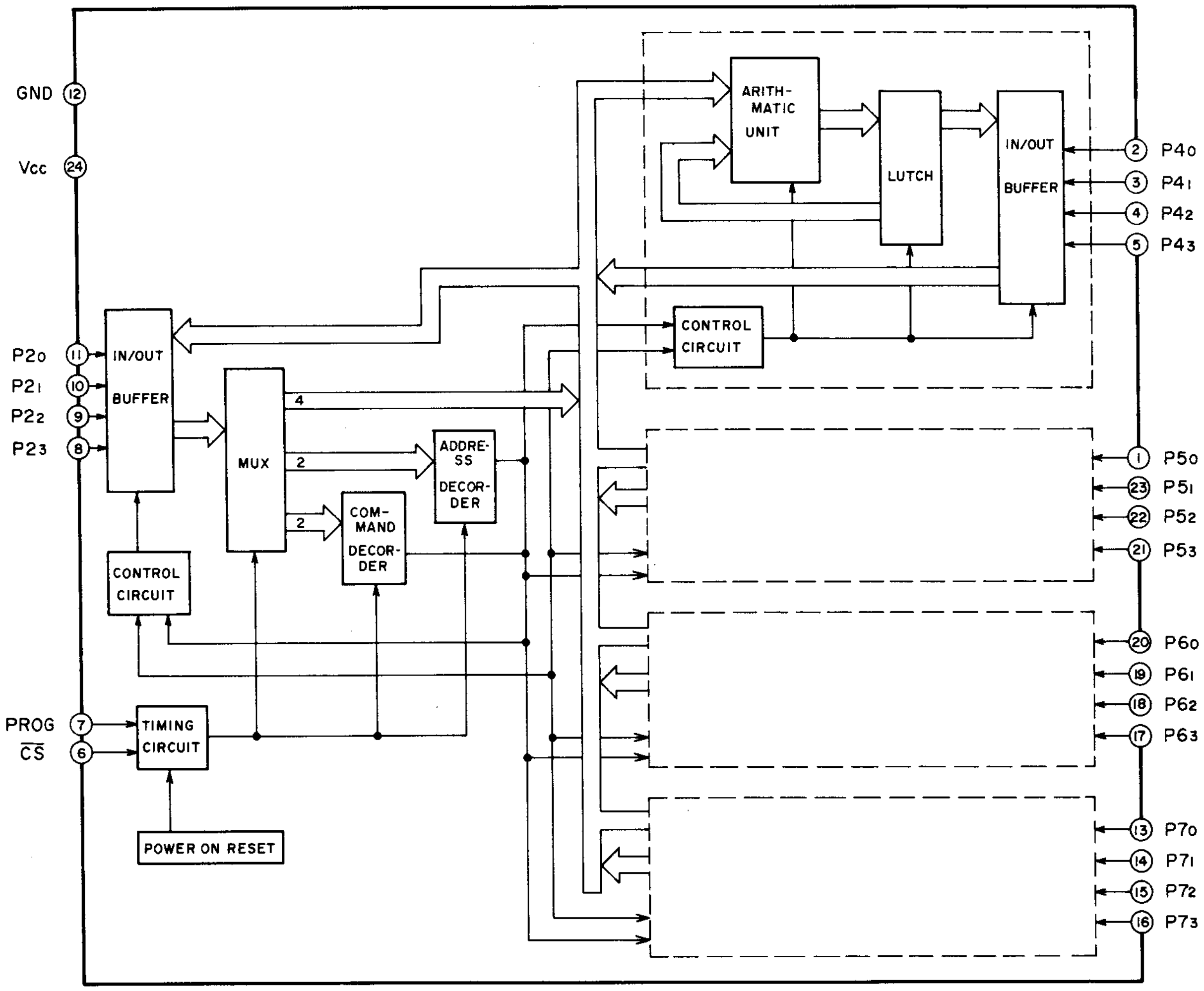
Pin No.	Symbol	Description
7 8	VIDEO J AFT	○ These are terminals for TV search to which "H" is input when VIDEO signal is in normal, "L" in abnormal.
9	LRQEN	○ Types except VS-4EO, SEG are controlled depending on whether both differential inputs of switching pulse are input to pin 19 (IRQ) or not. ○ VS-4EO, SEG MODEL has 12 channels and 2 programes by means of turning this terminal to "C" level.
10	SAVE END	○ At Power down, "L" level is output, and a RESET functions.
11	TEST	
12 13 14 15	TRP SRP CTL SWP	These terminals are used for controlling Reel STOP and the judgements of Drum MOTOR STOP SP/LP MODE by means of inputting TAKE-UP Reel Pulse, Supply Reel Pulse, CTL Pulse and Switching Pulse.
16 17	EX X	Clock oscillator terminal Clock oscillator terminal
18	RESET	At "H" level, RESET is removed.
19	IRQ	For triger input to make a dummy V-Sync at TRIC Mode.
20	TC	When the power down detector detects a power down, it turns to "L" level and saves the data in the RAM. After that, "L" level outputs at pin 10 save end and a Reset functions.
21	VSS	GND
22 23 24	S CLK S IN/OUT S OUT/IN	These terminals are used for data TRANSFER between the terminals of IC_2 MB88401 of operation PCB.
25 26 27 28	EE REC PB12 AL	○ EE12 ○ REC12 ○ PB12 ○ AL12 These are control signal output terminals which control EE12V, REC12V, PB12V and AL12V.
29	SERVO	Only when DRUM MOTOR stops, it turns "H" level and Drum Heater turns on.
30	MUTE	
31 32	BS 2 BS 1	These are the terminals for signal outputs of band selector control which select VHF-High, VHF-Low and UHF, according to the combination of "H" output and "L" at BS1 and BS2.
33 34 35 36	PAL/SECAM DOLBY TEST LP/SP	Not used.
37	O MUTE	For control signal output which controls the Mute circuit of Audio signal ("H" = MUTE)
38	PRG2	This is the control signal output which controls 8 input terminals and 8 output terminals of expander IC_1 (MBL8243) at MECH DRIVE PCB.
39	VP	This terminal outputs a dummy V-Sync at Tric Mode.
40	LDI	This terminal outputs the address of DACIC_7 (MB88301) and the data of out-read/ out-control signals.
41	VM	When RESET input is at "L" level, the content of RAM is maintained if more than 3V of power is supplied.
42	VDD	Power input

MB88303



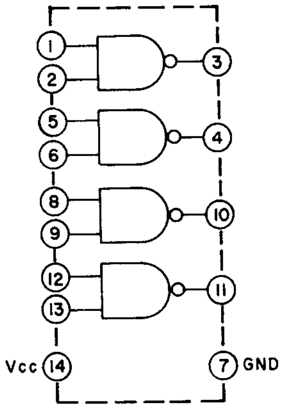
LDI
ADM
DO2
DO1
DO0
12
13
4
3
2
Vcc 22
ADDRESS MEMORY CONTROL
MEMORY ADDRESS REGISTER WITH +1 FUNCTION
OUTPUT LUTCH
DA7 21
DA6 20
DA5 19
DA4 18
DA3 17
DA2 16
DA1 15
DA0 14
H. CHARACTER SIZE REGISTER
H. POSITION REGISTER
V. CHARACTER SIZE REGISTER
V. POSITION REGISTER
BLINKING REGISTER
DATA MEMORY
BLINKING CONTROL
RESET 1
H. CHARACTER SIZE CONTROL
H. INDICATE POSITION CONTROL
V. CHARACTER SIZE CONTROL
V. INDICATE POSITION CONTROL
INDICATE CHARACTER SELECTER
CHARACTER GENERATOR
Vss 11
CLOCK OSC
TIMING OSC
SHIFT REGISTER
INDICATION CONTROL
9
10
8
7
5
6
EX
X
H SYNC
V SYNC
VOW
VOB

MB8243

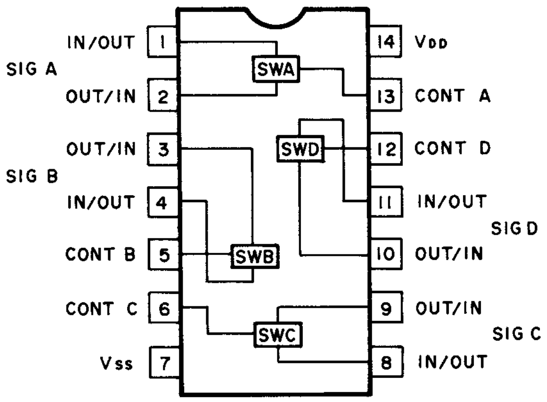


GND 12
Vcc 24
ARITHMATIC UNIT
LUTCH
IN/OUT BUFFER
2 P40
3 P41
4 P42
5 P43
CONTROL CIRCUIT
P20 11
P21 10
P22 9
P23 8
IN/OUT BUFFER
MUX
4
2
2
ADDRESS DECORDER
COMMAND DECORDER
1 P50
23 P51
22 P52
21 P53
CONTROL CIRCUIT
20 P60
19 P61
18 P62
17 P63
PROG 7
CS 6
TIMING CIRCUIT
POWER ON RESET
13 P70
14 P71
15 P72
16 P73

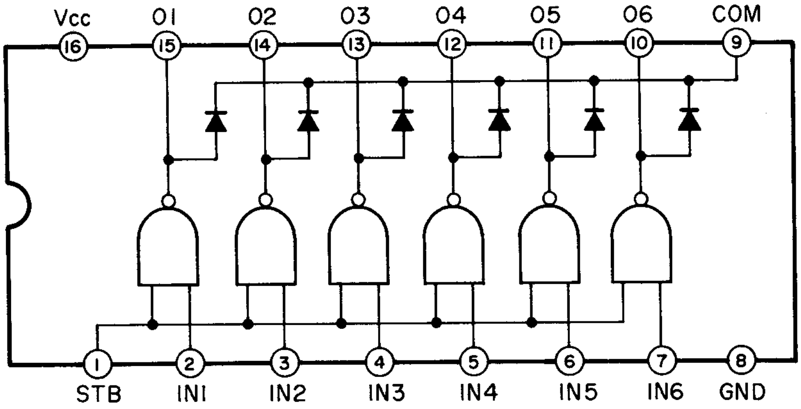
MC14011BCP


①
②
③
⑤
⑥
④
⑧
⑨
⑩
⑫
⑬
⑪
Vcc ⑭
⑦ GND

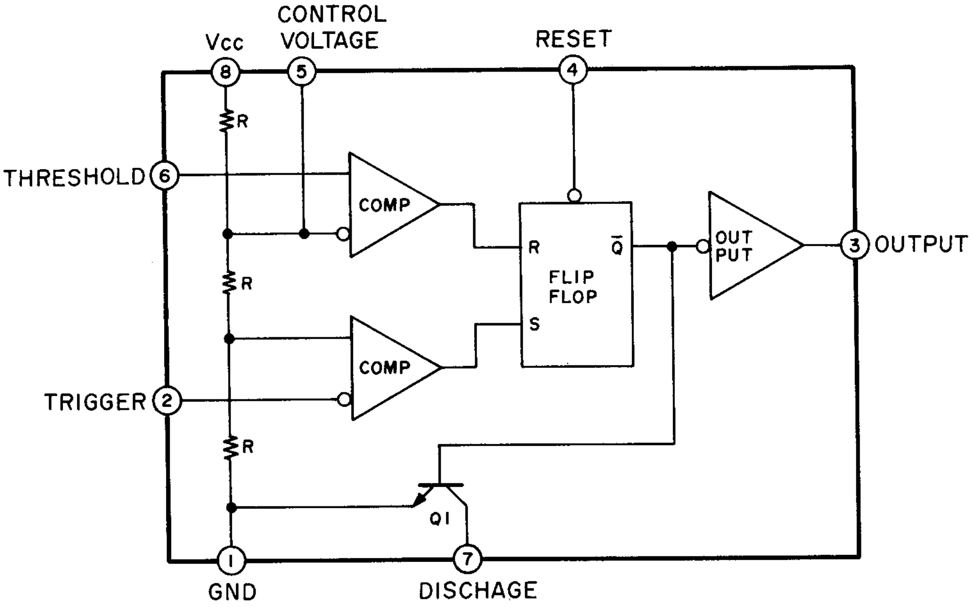
MC14066BCP


IN/OUT 1
SIG A
OUT/IN 2
OUT/IN 3
SIG B
IN/OUT 4
CONT B 5
CONT C 6
Vss 7
SWA
SWD
SWB
SWC
14 VDD
13 CONT A
12 CONT D
11 IN/OUT
SIG D
10 OUT/IN
9 OUT/IN
SIG C
8 IN/OUT

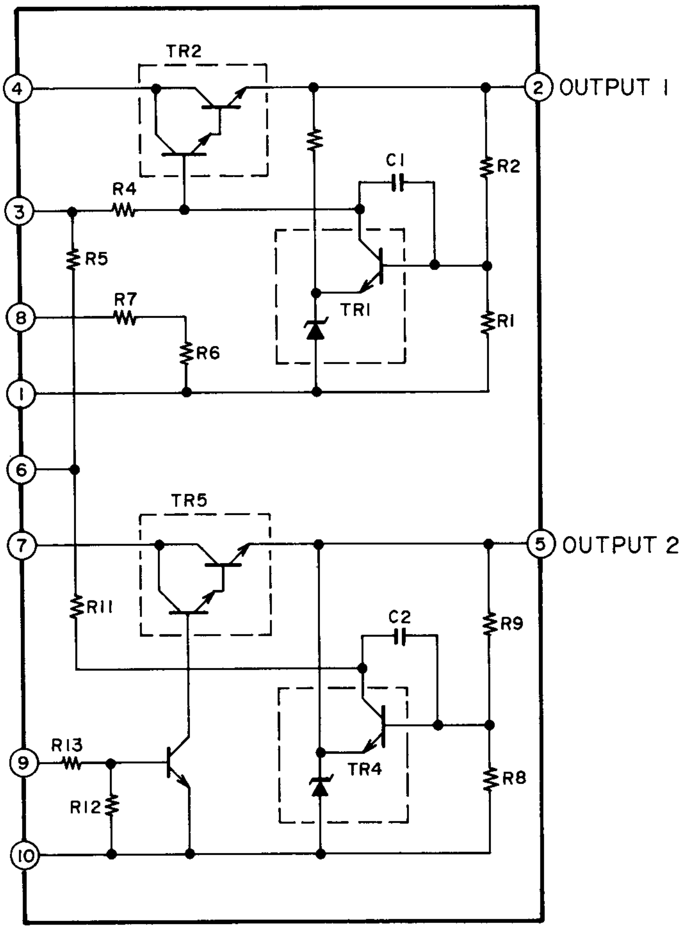
M54534P


Vcc ⑯
O1 ⑮
O2 ⑭
O3 ⑬
O4 ⑫
O5 ⑪
O6 ⑩
COM ⑨
① STB
② IN1
③ IN2
④ IN3
⑤ IN4
⑥ IN5
⑦ IN6
⑧ GND

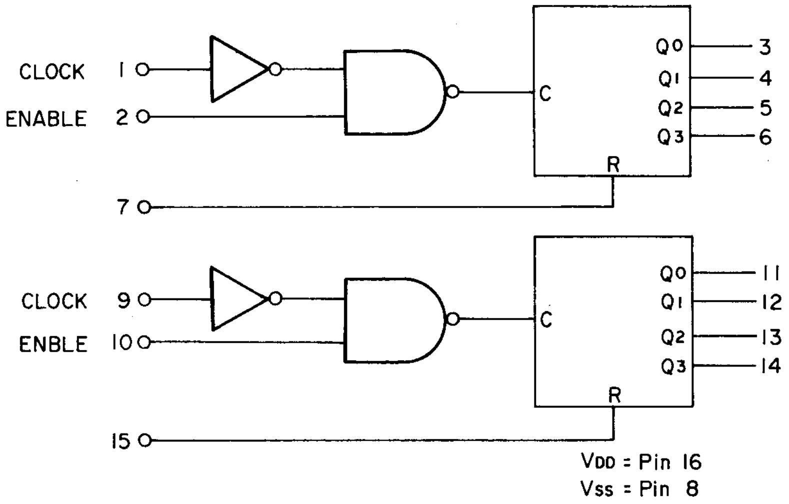
NE555P


Vcc ⑧
CONTROL VOLTAGE ⑤
RESET ④
THRESHOLD ⑥
R
R
R
COMP
COMP
R
Q̄
S
FLIP FLOP
OUT PUT
③ OUTPUT
TRIGGER ②
Q1
① GND
⑦ DISCHAGE

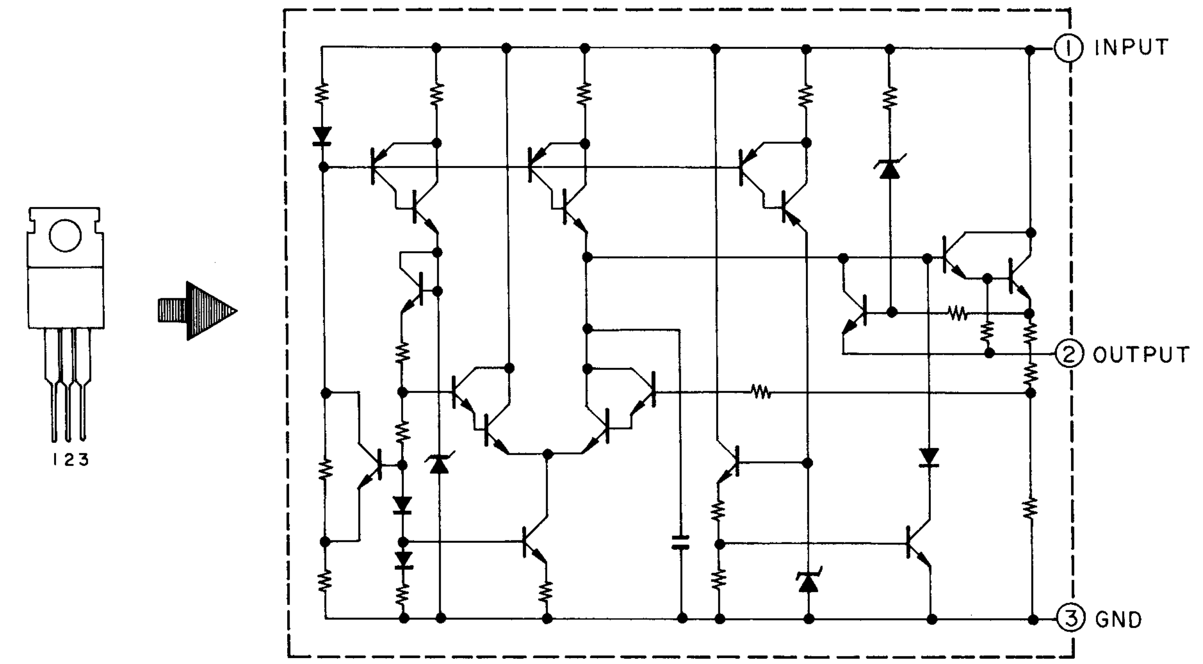
STK-5325


TR2
4
2 OUTPUT 1
R4
3
C1
R2
R5
TR1
R7
8
R6
R1
1
6
TR5
7
5 OUTPUT 2
R11
C2
R9
R13
9
TR4
R8
R12
10

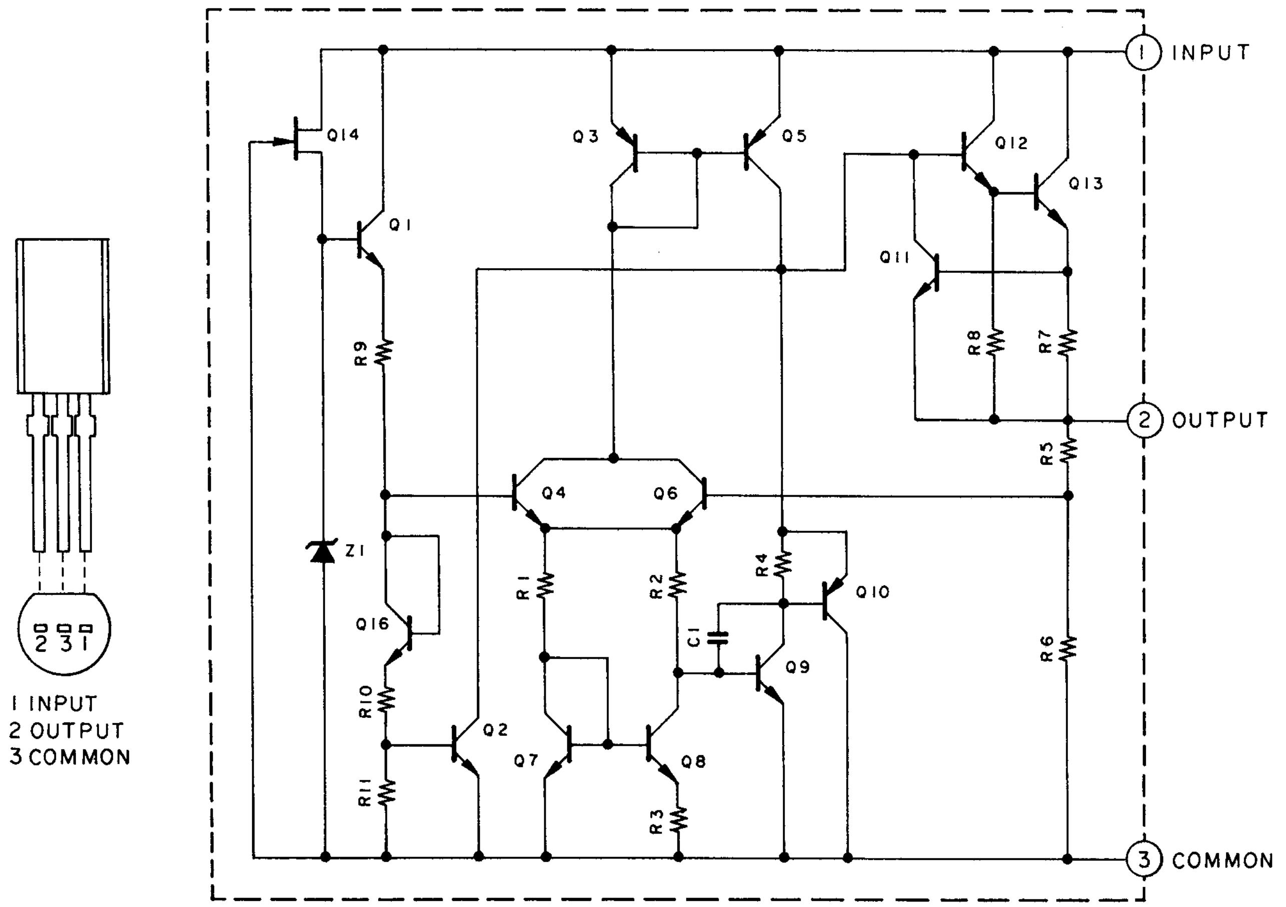
TC4520BP


CLOCK
1
ENABLE
2
C
Q0
Q1
Q2
Q3
3
4
5
6
R
7
CLOCK
9
ENBLE
10
C
Q0
Q1
Q2
Q3
11
12
13
14
R
15
VDD = Pin 16
Vss = Pin 8

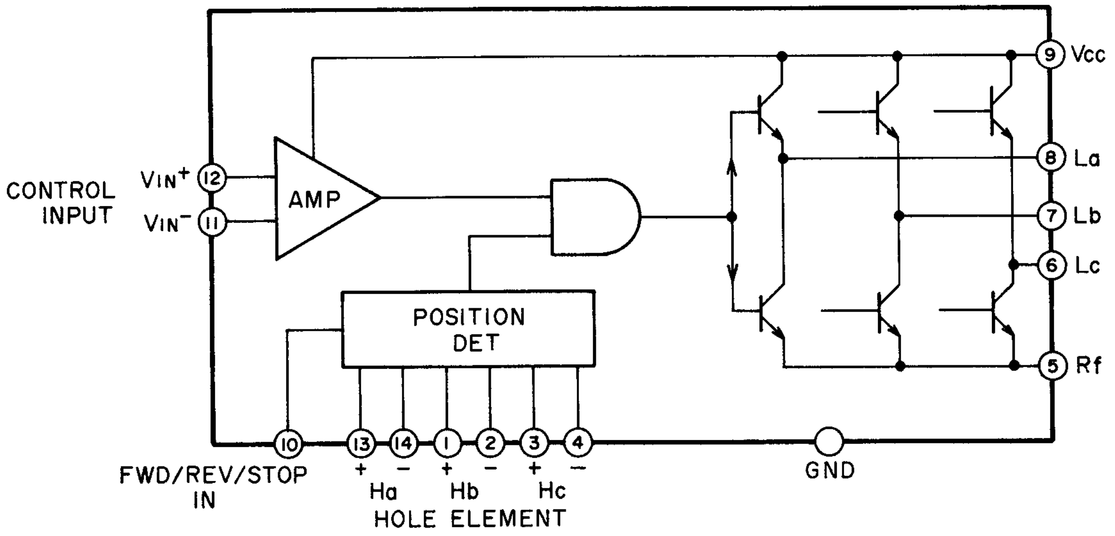
TA78005P


123
1 INPUT
2 OUTPUT
3 GND

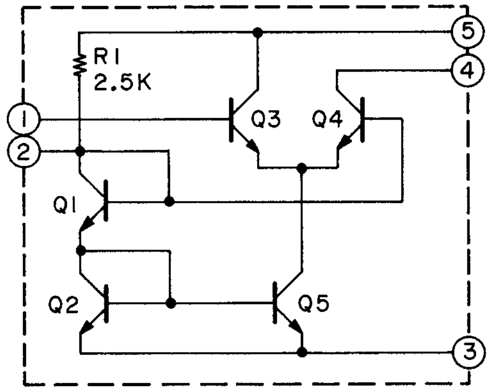
TA78L005AP


2 3 1
1 INPUT
2 OUTPUT
3 COMMON
1 INPUT
2 OUTPUT
3 COMMON
Q14
Q1
Q3
Q5
Q12
Q13
Q11
R9
R8
R7
R5
Q4
Q6
Z1
Q16
R1
R2
R4
Q10
C1
Q9
R6
R10
Q2
Q7
Q8
R11
R3

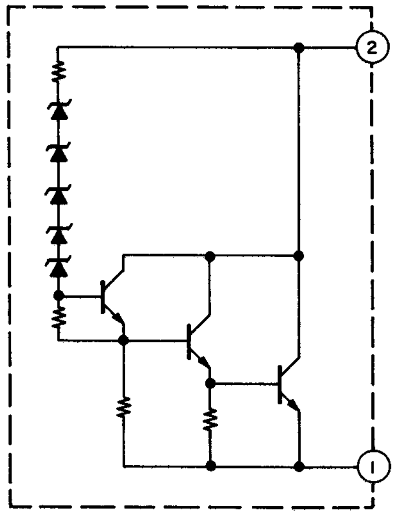
TA7245P

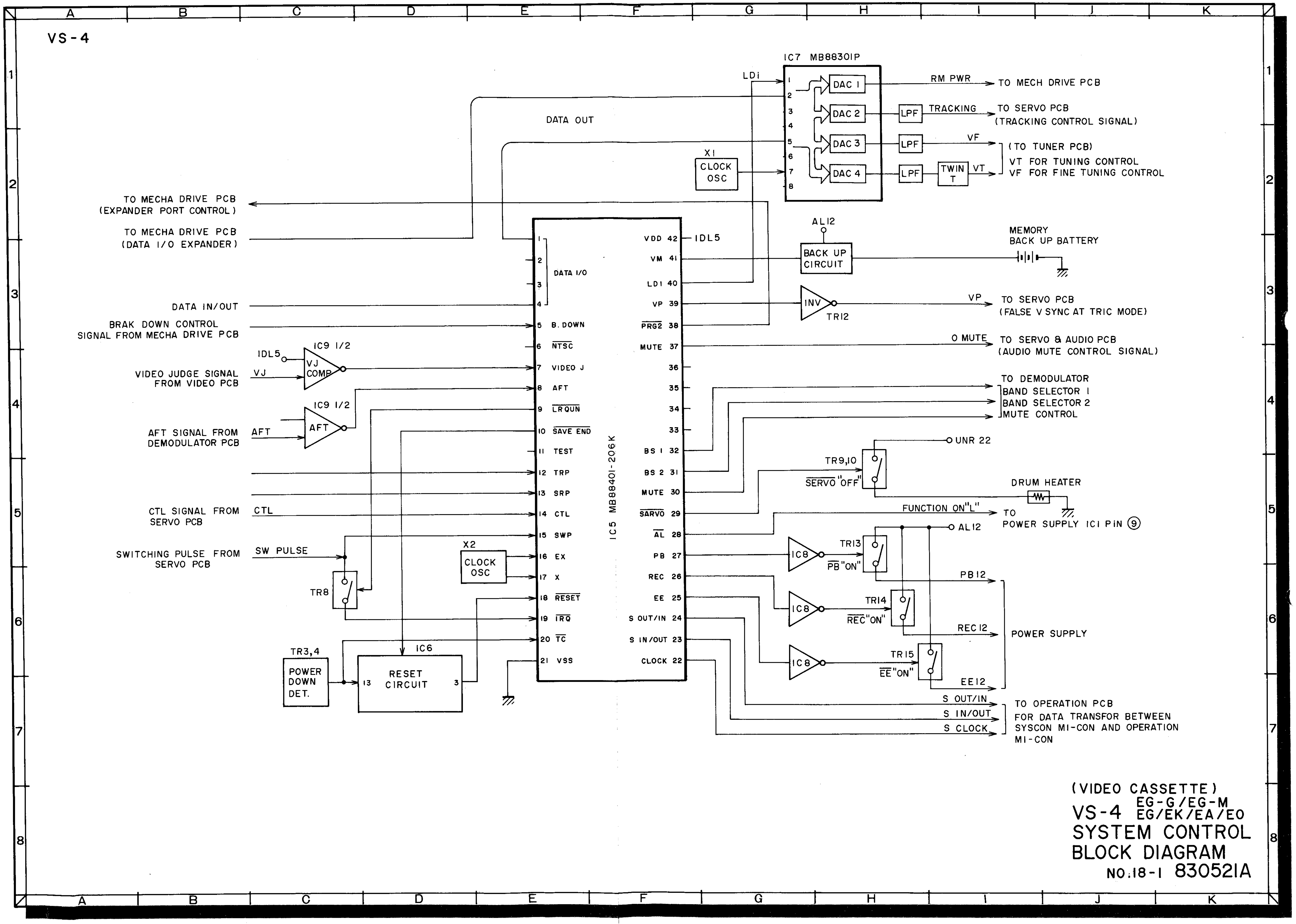

9 Vcc
8 La
7 Lb
6 Lc
5 Rf
CONTROL INPUT
VIN+ 12
VIN- 11
AMP
POSITION DET
10
FWD/REV/STOP IN
13
14
1
2
3
4
+ − + − + −
Ha Hb Hc
HOLE ELEMENT
GND

TA7060AP

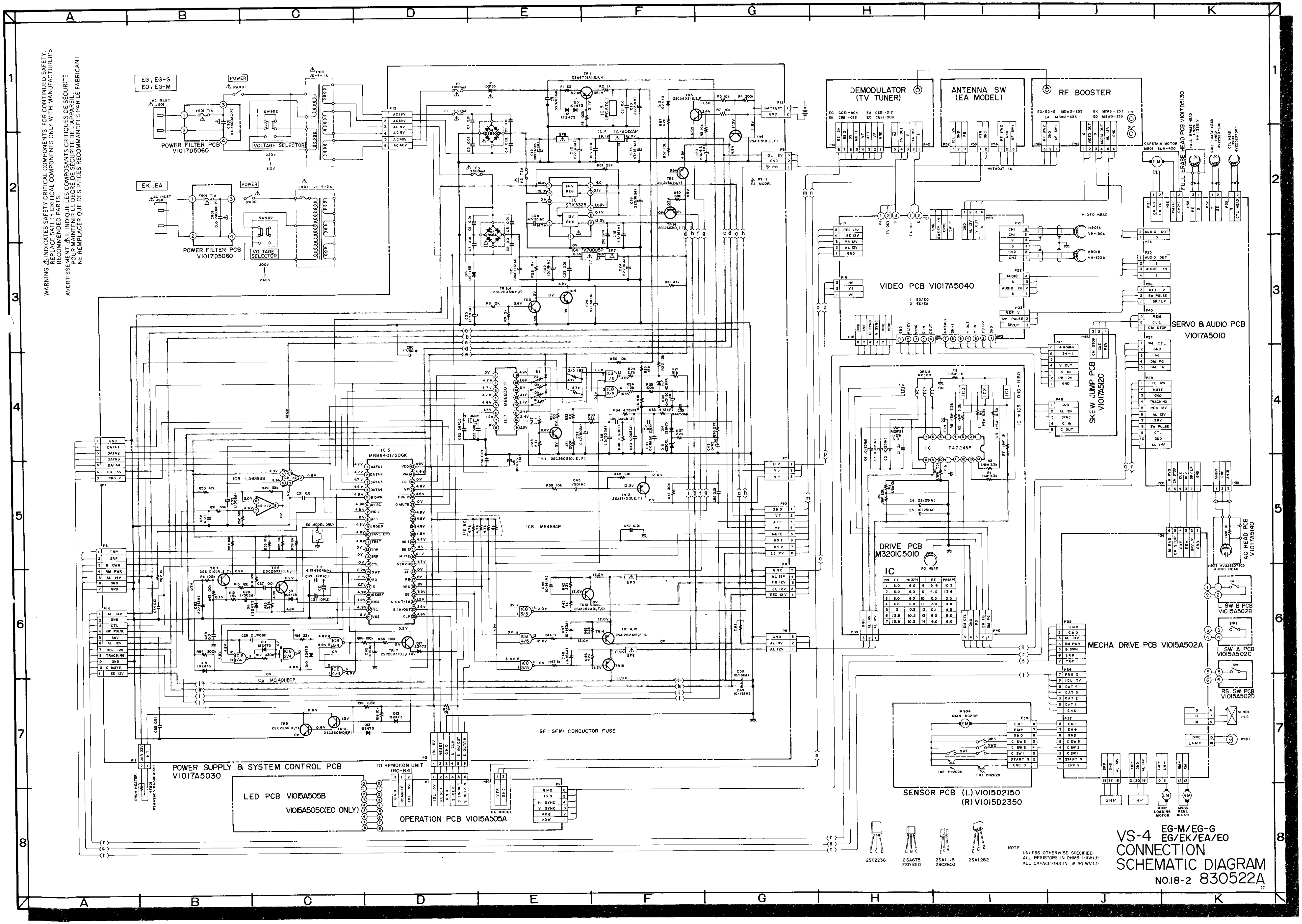

R1
2.5K
1
2
Q1
Q2
Q3
Q4
Q5
5
4
3

μPC574J




VS-4
IC7 MB88301P
LDi
DAC 1
DAC 2
DAC 3
DAC 4
LPF
LPF
LPF
TWIN T
RM PWR
TO MECH DRIVE PCB
TRACKING
TO SERVO PCB
(TRACKING CONTROL SIGNAL)
VF
(TO TUNER PCB)
VT
VT FOR TUNING CONTROL
VF FOR FINE TUNING CONTROL
DATA OUT
X1
CLOCK OSC
TO MECHA DRIVE PCB
(EXPANDER PORT CONTROL)
TO MECHA DRIVE PCB
(DATA I/O EXPANDER)
DATA IN/OUT
BRAK DOWN CONTROL
SIGNAL FROM MECHA DRIVE PCB
IDL5
IC9 1/2
VJ COMP
VIDEO JUDGE SIGNAL
FROM VIDEO PCB
VJ
IC9 1/2
AFT
AFT SIGNAL FROM
DEMODULATOR PCB
AFT
CTL SIGNAL FROM
SERVO PCB
CTL
SWITCHING PULSE FROM
SERVO PCB
SW PULSE
TR8
X2
CLOCK OSC
TR3,4
POWER DOWN DET.
IC6
RESET CIRCUIT
13
3
IC5 MB88401-206K
1 2 3 4 DATA I/O
5 B. DOWN
6 NTSC
7 VIDEO J
8 AFT
9 LRQUN
10 SAVE END
11 TEST
12 TRP
13 SRP
14 CTL
15 SWP
16 EX
17 X
18 RESET
19 IRQ
20 TC
21 VSS
VDD 42
VM 41
LDI 40
VP 39
PRG2 38
MUTE 37
36
35
34
33
BS 1 32
BS 2 31
MUTE 30
SARVO 29
AL 28
PB 27
REC 26
EE 25
S OUT/IN 24
S IN/OUT 23
CLOCK 22
IDL5
AL12
BACK UP CIRCUIT
MEMORY
BACK UP BATTERY
INV
TR12
VP
TO SERVO PCB
(FALSE V SYNC AT TRIC MODE)
O MUTE
TO SERVO & AUDIO PCB
(AUDIO MUTE CONTROL SIGNAL)
TO DEMODULATOR
BAND SELECTOR 1
BAND SELECTOR 2
MUTE CONTROL
UNR 22
TR9,10
SERVO "OFF"
DRUM HEATER
FUNCTION ON "L"
TO
POWER SUPPLY IC1 PIN ⑨
AL12
IC8
TR13
PB "ON"
PB12
IC8
TR14
REC "ON"
REC12
POWER SUPPLY
IC8
TR15
EE "ON"
EE12
S OUT/IN
S IN/OUT
S CLOCK
TO OPERATION PCB
FOR DATA TRANSFOR BETWEEN
SYSCON MI-CON AND OPERATION
MI-CON
A B C D E F G H I J K
1 2 3 4 5 6 7 8

(VIDEO CASSETTE)
VS-4 EG-G/EG-M
EG/EK/EA/EO
SYSTEM CONTROL
BLOCK DIAGRAM
NO.18-1 830521A


POWER FILTER PCB V1017D5060
VOLTAGE SELECTOR
POWER SUPPLY & SYSTEM CONTROL PCB V1017A5030
LED PCB V1015A505B
V1015A505C(EO ONLY)
OPERATION PCB V1015A505A
TO REMOCON UNIT (RC-R4)
SF : SEMI CONDUCTOR FUSE
DEMODULATOR (TV TUNER)
ANTENNA SW (EA MODEL)
RF BOOSTER
VIDEO PCB V1017A5040
SERVO & AUDIO PCB V1017A5010
SKEW JUMP PCB V1017A5120
DRIVE PCB M3201C5010
MECHA DRIVE PCB V1015A502A
SENSOR PCB (L) V1015D2150
(R) V1015D2350
L SW B PCB V1015A502B
L SW A PCB V1015A502C
RS SW PCB V1015A502D
AC HEAD PCB V1017A5140
FULL ERASE HEAD PCB V1017D5130
CAPSTAN MOTOR M901 BLM-400
M902 LOADING MOTOR
M903 REEL MOTOR
2SC2236
2SA675 2SD1010
2SA1115 2SC2603
2SA1282

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

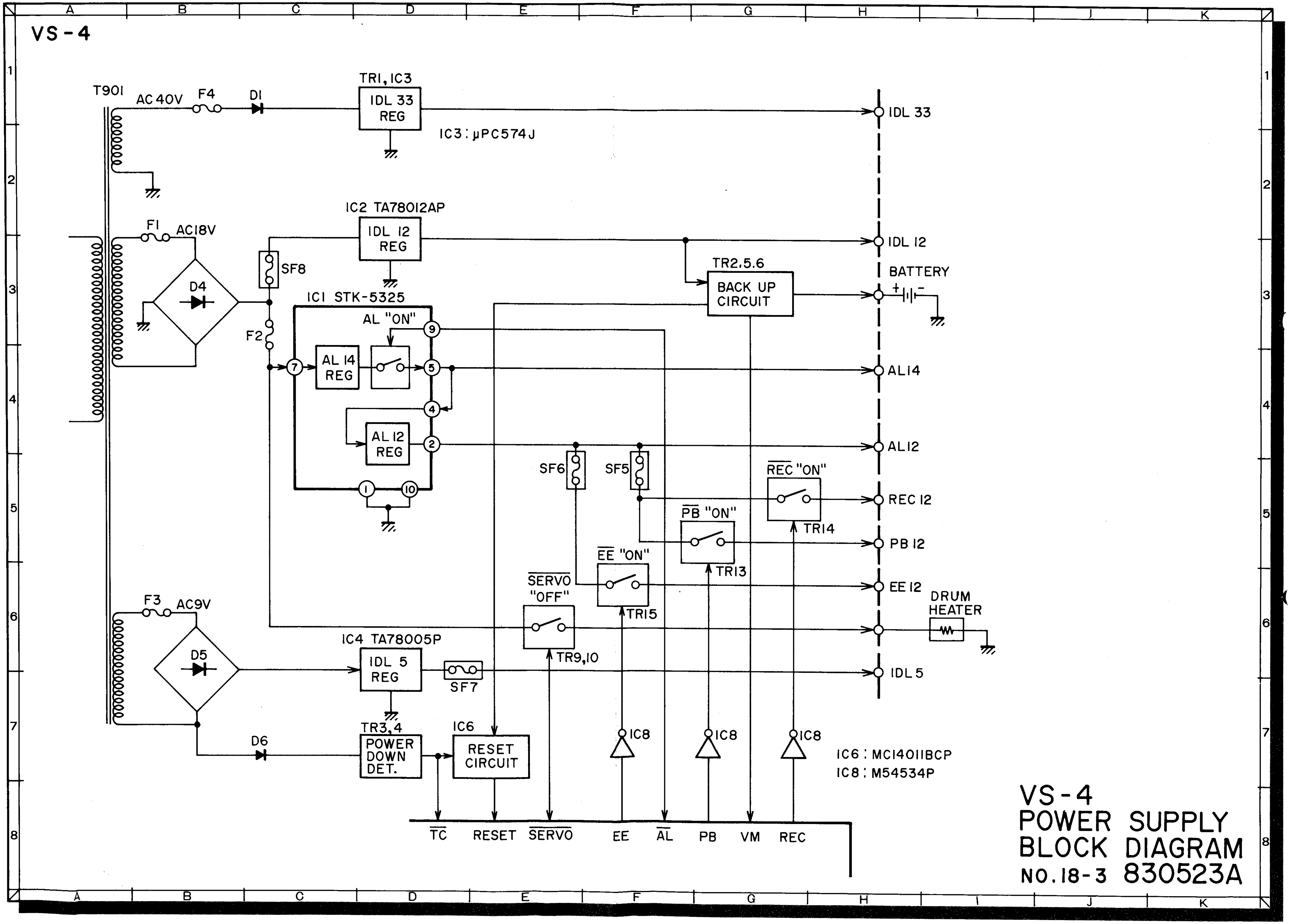
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

VS-4 EG-M/EG-G EG/EK/EA/EO CONNECTION SCHEMATIC DIAGRAM

NO.18-2 830522A

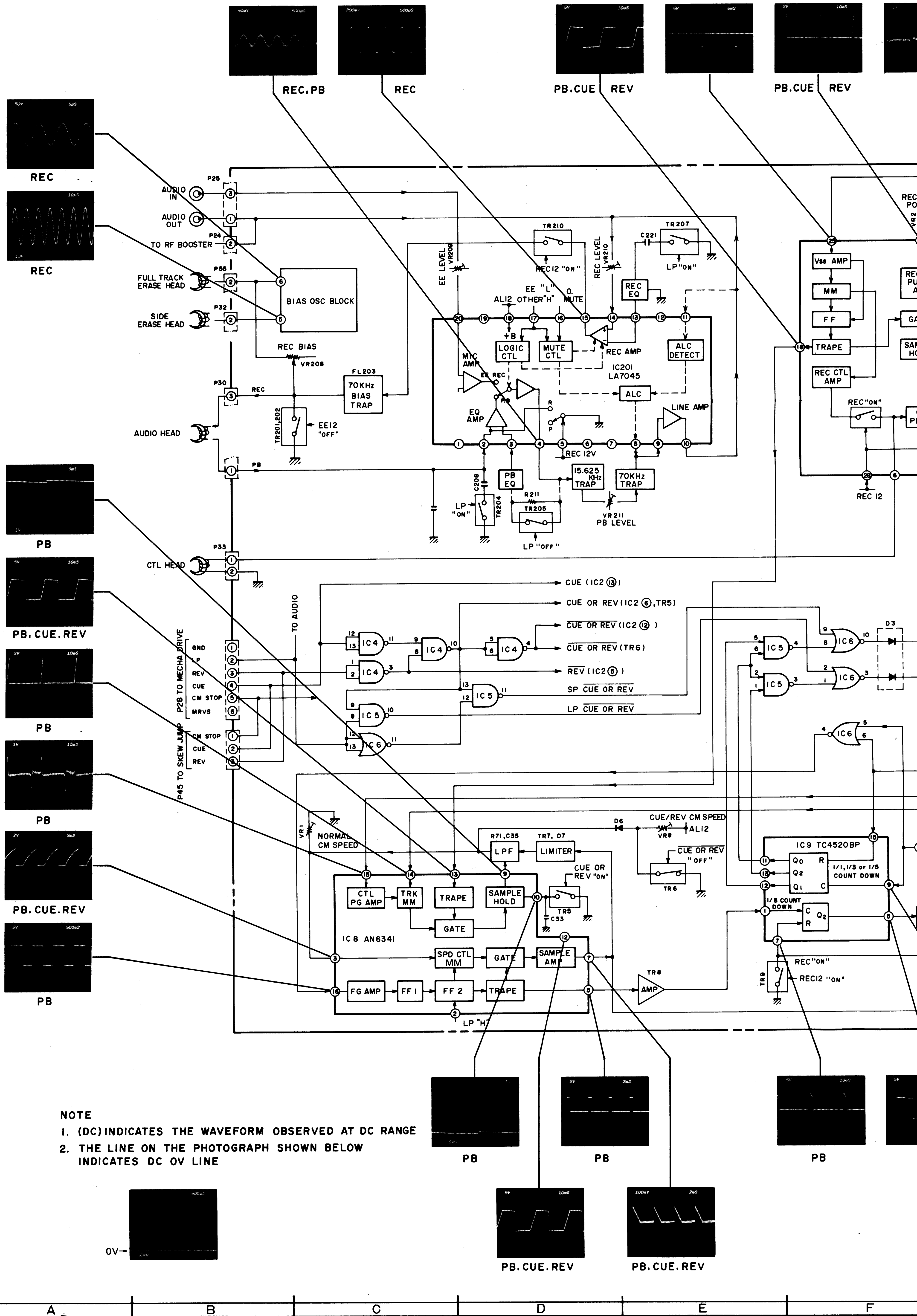
3C


VS-4
T901
AC 40V
F4
D1
TR1, IC3
IDL 33 REG
IC3 : μPC574J
IDL 33
IC2 TA78012AP
IDL 12 REG
F1
AC18V
D4
SF8
F2
IC1 STK-5325
AL "ON"
AL 14 REG
AL 12 REG
⑦
⑨
⑤
④
②
①
⑩
IDL 12
TR2,5,6
BACK UP CIRCUIT
BATTERY
AL14
AL12
SF6
SF5
REC "ON"
REC 12
TR14
PB "ON"
PB 12
TR13
EE "ON"
EE 12
TR15
SERVO "OFF"
TR9,10
DRUM HEATER
F3
AC9V
D5
IC4 TA78005P
IDL 5 REG
SF7
IDL 5
D6
TR3,4
POWER DOWN DET.
IC6
RESET CIRCUIT
IC8
IC8
IC8
IC6 : MC14011BCP
IC8 : M54534P
TC
RESET
SERVO
EE
AL
PB
VM
REC
A B C D E F G H I J K
1 2 3 4 5 6 7 8

VS-4 POWER SUPPLY BLOCK DIAGRAM

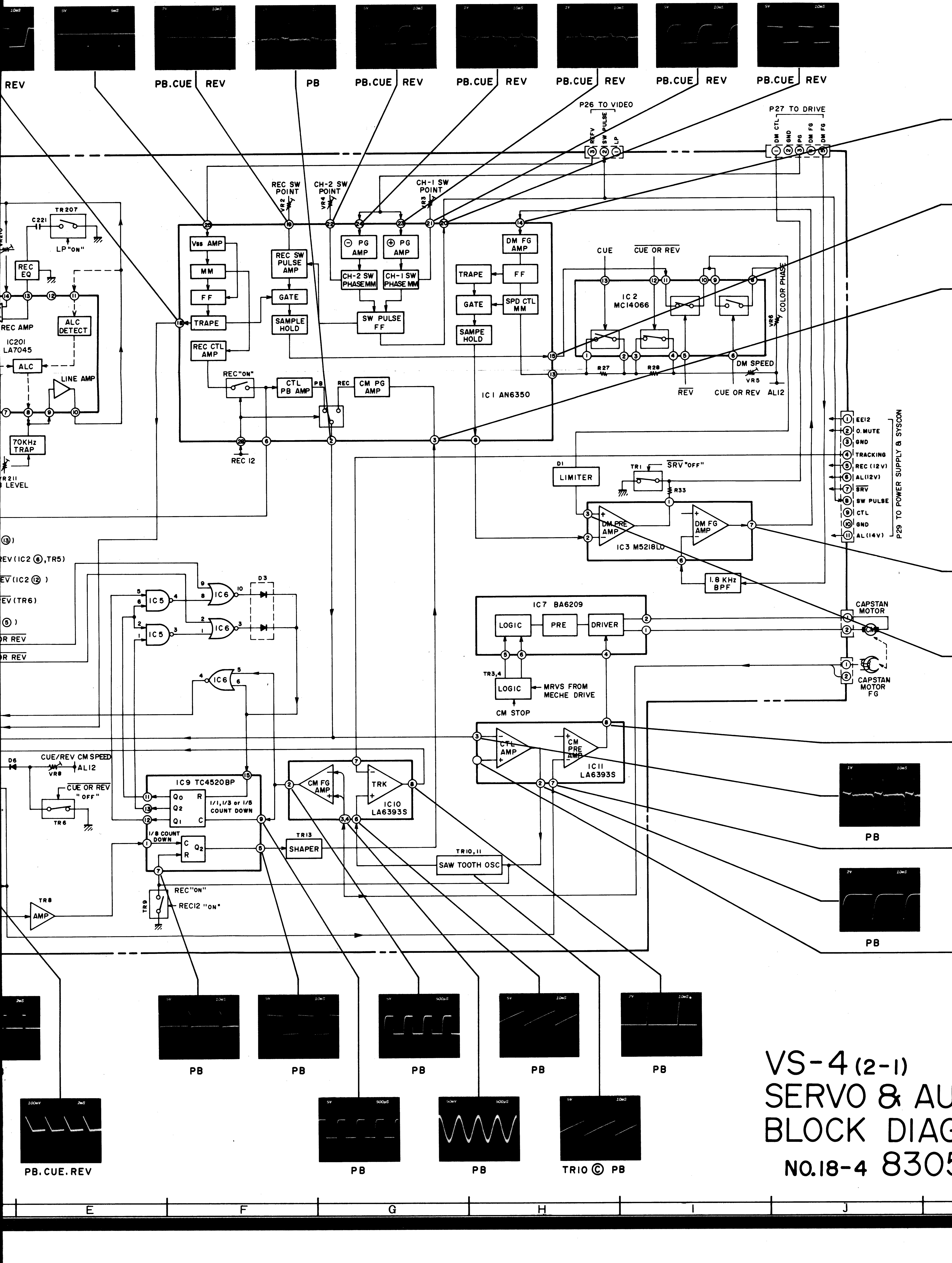
NO. 18-3 830523A

VS-4

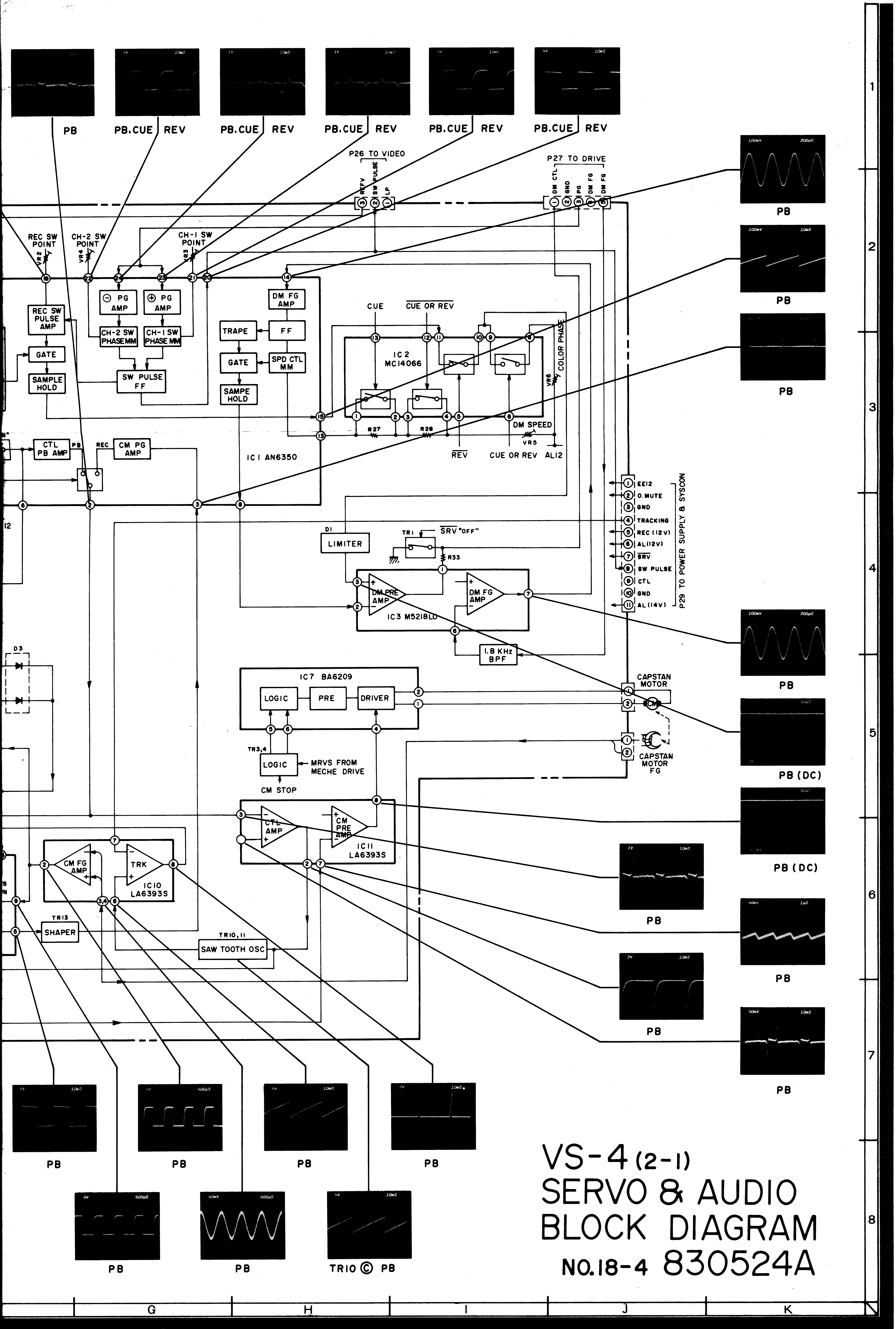

REC.PB
REC
PB.CUE
REV
PB.CUE
REV
REC
REC
PB
PB.CUE.REV
PB
PB
PB.CUE.REV
PB
AUDIO IN
AUDIO OUT
TO RF BOOSTER
P25
P24
P58
P32
P30
P33
FULL TRACK ERASE HEAD
SIDE ERASE HEAD
AUDIO HEAD
CTL HEAD
BIAS OSC BLOCK
REC BIAS
VR208
FL203
70KHz BIAS TRAP
TR201,202
EE12 "OFF"
REC
PB
EE LEVEL VR209
TR210
REC12 "ON"
REC LEVEL VR210
C221
TR207
LP "ON"
REC EQ
EE "L" OTHER "H"
AL12
O. MUTE
+B
LOGIC CTL
MUTE CTL
REC AMP
ALC DETECT
IC201 LA7045
MIC AMP
EE REC
EQ AMP
ALC
LINE AMP
R
P
REC 12V
C206
LP "ON"
TR204
PB EQ
R211
TR205
LP "OFF"
15.625 KHz TRAP
70KHz TRAP
VR211 PB LEVEL
TO AUDIO
P28 TO MECHA DRIVE
GND
LP
REV
CUE
CM STOP
MRVS
P45 TO SKEW JUMP
CM STOP
CUE
REV
IC4
IC5
IC6
CUE (IC2 ⑬)
CUE OR REV (IC2 ⑥, TR5)
CUE OR REV (IC2 ⑫)
CUE OR REV (TR6)
REV (IC2 ⑤)
SP CUE OR REV
LP CUE OR REV
VR1 NORMAL CM SPEED
R71, C35
TR7, D7
LPF
LIMITER
D6
CUE/REV CM SPEED
VR8
AL12
CUE OR REV "OFF"
TR6
CUE OR REV "ON"
TR5
C33
CTL PG AMP
TRK MM
TRAPE
SAMPLE HOLD
GATE
IC8 AN6341
SPD CTL MM
GATE
SAMPLE AMP
FG AMP
FF1
FF 2
TRAPE
LP "H"
TR8
AMP
D3
IC9 TC4520BP
Q0
Q2
Q1
R
C
1/1, 1/3 or 1/6 COUNT DOWN
1/8 COUNT DOWN
Q2
TR9
REC "ON"
REC12 "ON"
REC PO
VR2
Vss AMP
MM
FF
TRAPE
REC CTL AMP
REC "ON"
REC 12
REC PU A
GA
SAM HO
P
PB
PB
PB
PB.CUE.REV
PB.CUE.REV
0V
A
B
C
D
E
F

NOTE

1. (DC) INDICATES THE WAVEFORM OBSERVED AT DC RANGE
2. THE LINE ON THE PHOTOGRAPH SHOWN BELOW INDICATES DC OV LINE


REV
PB.CUE
REV
PB
PB.CUE
REV
PB.CUE
REV
PB.CUE
REV
PB.CUE
REV
PB.CUE
REV
P26 TO VIDEO
REFV
SW PULSE
LP
P27 TO DRIVE
DM CTL
GND
PG
DM FG
DM FG
TR207
C221
LP"ON"
REC EQ
REC AMP
IC201
LA7045
ALC DETECT
ALC
LINE AMP
70KHz TRAP
VR211
LEVEL
REC SW POINT
VR2
CH-2 SW POINT
VR4
CH-1 SW POINT
VR3
Vss AMP
MM
FF
TRAPE
REC CTL AMP
REC SW PULSE AMP
GATE
SAMPLE HOLD
⊖ PG AMP
⊕ PG AMP
CH-2 SW PHASE MM
CH-1 SW PHASE MM
SW PULSE FF
REC"ON"
CTL PB AMP
PB
REC
CM PG AMP
REC 12
IC1 AN6350
DM FG AMP
FF
TRAPE
GATE
SPD CTL MM
SAMPE HOLD
CUE
CUE OR REV
IC2
MC14066
COLOR PHASE
VR6
R27
R28
DM SPEED
VR5
REV
CUE OR REV
AL12
D1
LIMITER
TR1
SRV"OFF"
R33
DM PRE AMP
DM FG AMP
IC3 M5218L
1.8 KHz BPF
EE12
O.MUTE
GND
TRACKING
REC (12V)
AL(12V)
SRV
SW PULSE
CTL
GND
AL(14V)
P29 TO POWER SUPPLY & SYSCON
CAPSTAN MOTOR
CM
CAPSTAN MOTOR FG
IC7 BA6209
LOGIC
PRE
DRIVER
TR3,4
LOGIC
MRVS FROM MECHE DRIVE
CM STOP
CTL AMP
CM PRE AMP
IC11
LA6393S
(13)
REV(IC2 ⑥,TR5)
EV(IC2 ⑫)
EV(TR6)
⑤)
R REV
R REV
IC5
IC6
IC5
IC6
IC6
D3
D6
CUE/REV CM SPEED
VR8
AL12
CUE OR REV "OFF"
TR6
IC9 TC4520BP
1/1, 1/3 or 1/8 COUNT DOWN
1/8 COUNT DOWN
REC"ON"
REC12 "ON"
TR9
TR8
AMP
CM FG AMP
TRK
IC10
LA6393S
TR13
SHAPER
TR10,11
SAW TOOTH OSC
PB
PB
PB
PB
PB
PB
PB
PB.CUE.REV
PB
PB
TR10 Ⓒ PB
E
F
G
H
I
J

VS-4 (2-1)
SERVO & AU
BLOCK DIAG
NO.18-4 8305

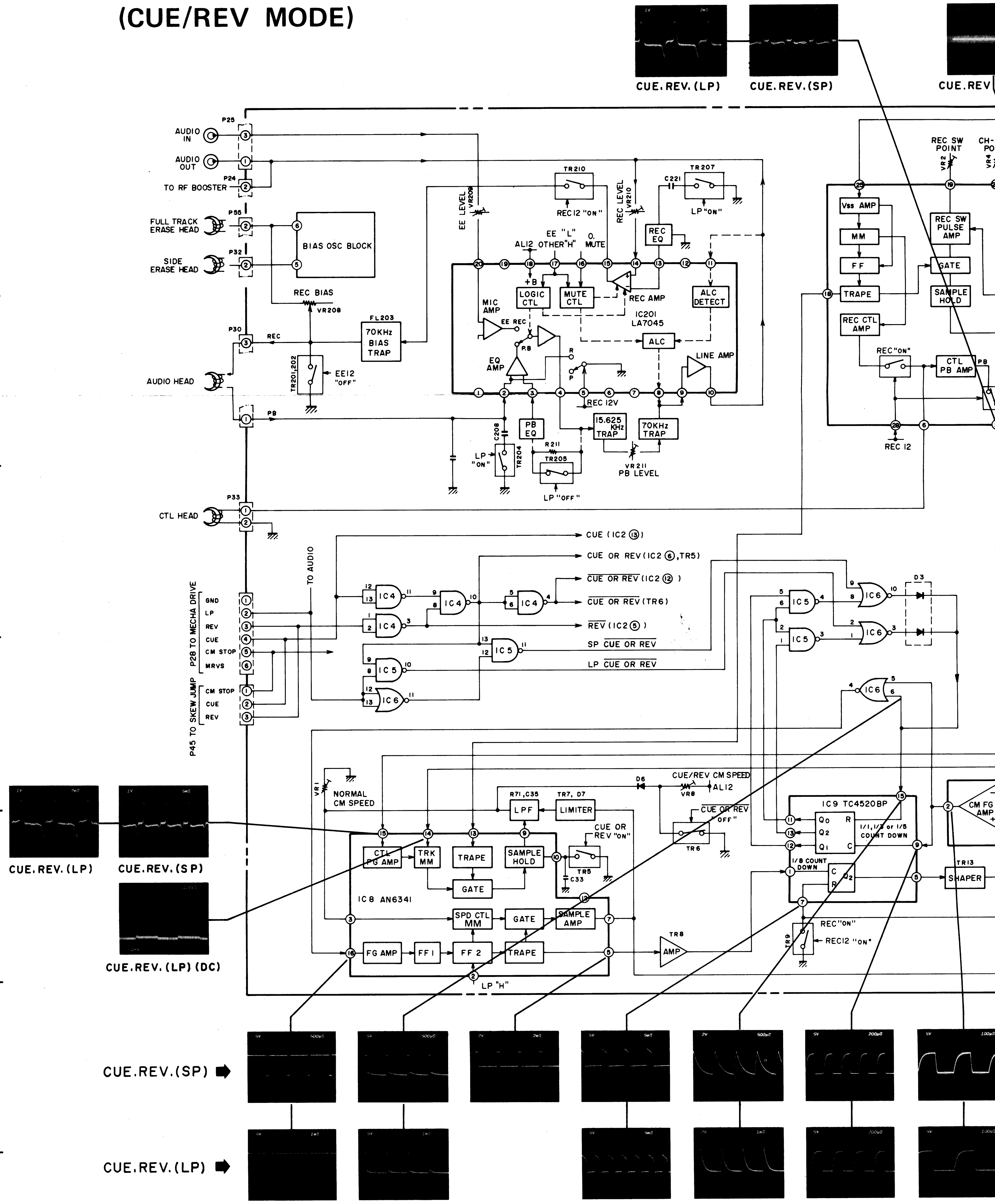

PB
PB.CUE
REV
P26 TO VIDEO
REV
SW PULSE
LP
P27 TO DRIVE
DM CTL
GND
PG
DM FG
DM FG
REC SW POINT
VR2
CH-2 SW POINT
VR4
CH-1 SW POINT
VR3
⊖ PG AMP
⊕ PG AMP
CH-2 SW PHASE MM
CH-1 SW PHASE MM
SW PULSE FF
REC SW PULSE AMP
GATE
SAMPLE HOLD
DM FG AMP
FF
TRAPE
GATE
SPD CTL MM
SAMPE HOLD
CUE
CUE OR REV
IC 2 MC14066
R27
R28
VR6
COLOR PHASE
DM SPEED
VR5
REV
CUE OR REV
AL12
IC 1 AN6350
CTL PB AMP
PB
REC
CM PG AMP
D1
LIMITER
TR1
SRV "OFF"
R33
DM PRE AMP
DM FG AMP
IC3 M5218L0
1.8 KHz BPF
EE12
O.MUTE
GND
TRACKING
REC (12V)
AL(12V)
SRV
SW PULSE
CTL
GND
AL(14V)
P29 TO POWER SUPPLY & SYSCON
D3
IC7 BA6209
LOGIC
PRE
DRIVER
CAPSTAN MOTOR
CM
CAPSTAN MOTOR FG
TR3,4
LOGIC
MRVS FROM MECHE DRIVE
CM STOP
CTL AMP
CM PRE AMP
IC11 LA6393S
CM FG AMP
TRK
IC10 LA6393S
TR13
SHAPER
TR10,11
SAW TOOTH OSC
PB (DC)
TRIO © PB
G
H
I
J
K
1
2
3
4
5
6
7
8

VS-4 (2-1)
SERVO & AUDIO BLOCK DIAGRAM

NO.18-4 830524A

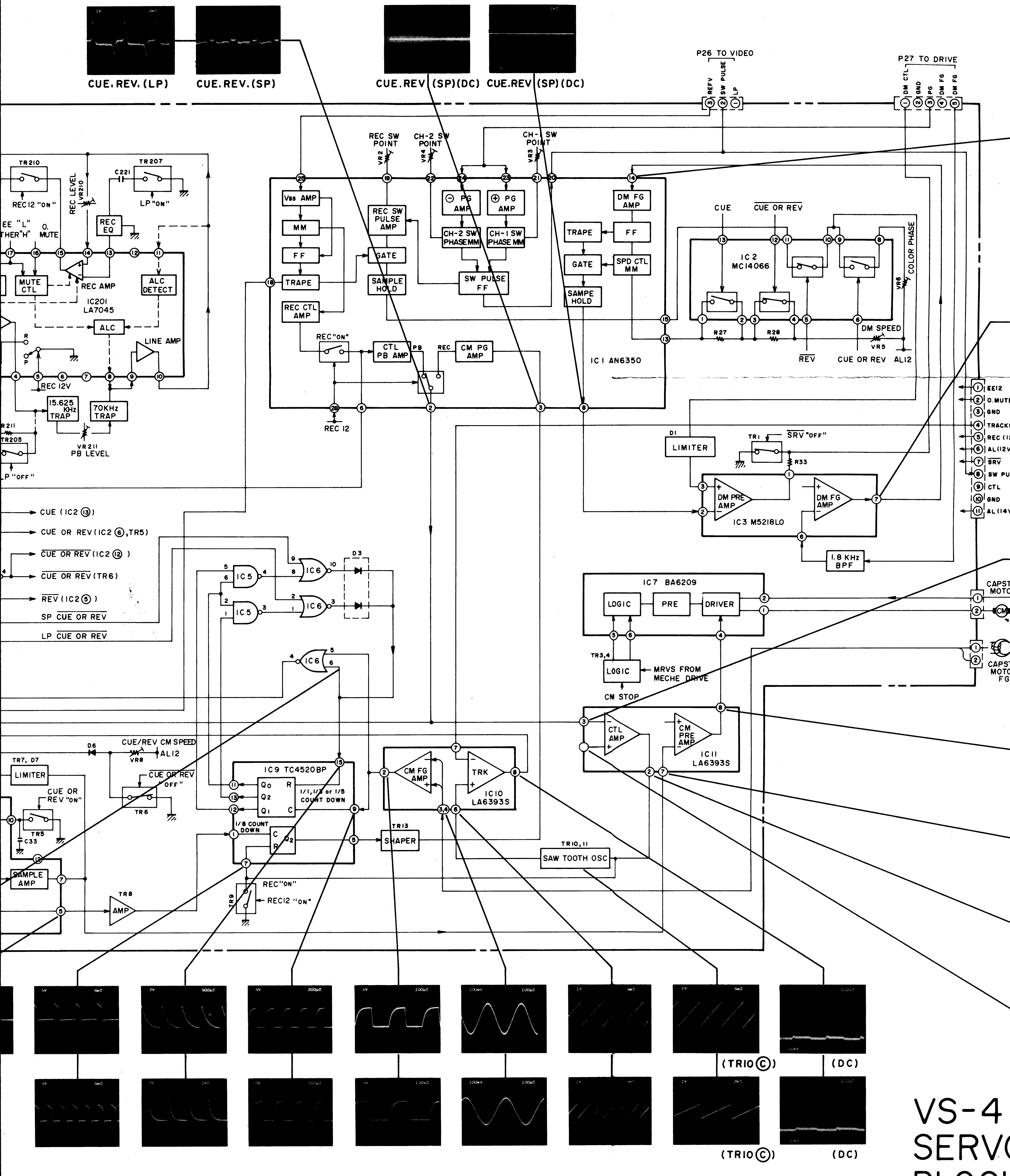
VS-4

(CUE/REV MODE)


CUE.REV.(LP)
CUE.REV.(SP)
CUE.REV
AUDIO IN
AUDIO OUT
TO RF BOOSTER
P25
P24
FULL TRACK ERASE HEAD
P55
SIDE ERASE HEAD
P32
BIAS OSC BLOCK
REC BIAS
VR208
FL203
70KHz BIAS TRAP
P30
REC
AUDIO HEAD
TR201,202
EE12 "OFF"
PB
TR210
REC12 "ON"
EE LEVEL
VR209
REC LEVEL
VR210
C221
TR207
LP "ON"
REC EQ
EE "L"
AL12 OTHER "H"
0. MUTE
+B
LOGIC CTL
MUTE CTL
REC AMP
ALC DETECT
MIC AMP
EE REC
IC201 LA7045
ALC
P.B
R
P
EQ AMP
LINE AMP
REC 12V
C208
LP "ON"
TR204
PB EQ
R211
TR205
LP "OFF"
15.625 KHz TRAP
70KHz TRAP
VR211 PB LEVEL
P33
CTL HEAD
CUE (IC2 ⑬)
CUE OR REV (IC2 ⑥,TR5)
CUE OR REV (IC2 ⑫)
CUE OR REV (TR6)
REV (IC2 ⑤)
SP CUE OR REV
LP CUE OR REV
TO AUDIO
P28 TO MECHA DRIVE
GND
LP
REV
CUE
CM STOP
MRVS
P45 TO SKEW JUMP
CM STOP
CUE
REV
IC4
IC5
IC6
D3
VR1
NORMAL CM SPEED
R71, C35
TR7, D7
LPF
LIMITER
D6
CUE/REV CM SPEED
VR8
AL12
CUE OR REV "OFF"
TR6
CUE OR REV "ON"
TR5
C33
CTL PG AMP
TRK MM
TRAPE
SAMPLE HOLD
GATE
IC8 AN6341
SPD CTL MM
SAMPLE AMP
FG AMP
FF 1
FF 2
LP "H"
TR8
AMP
IC9 TC4520BP
Q0
Q2
Q1
R
C
1/1, 1/3 or 1/5 COUNT DOWN
1/8 COUNT DOWN
Q2
REC "ON"
TR9
REC12 "ON"
TR13
SHAPER
CM FG AMP
REC SW POINT
VR2
CH-
Vss AMP
MM
FF
TRAPE
REC SW PULSE AMP
GATE
SAMPLE HOLD
REC CTL AMP
REC "ON"
CTL PB AMP
REC 12
CUE.REV.(LP)
CUE.REV.(SP)
CUE.REV.(LP)(DC)
CUE.REV.(SP) ➡
CUE.REV.(LP) ➡
1
2
3
4
5
6
7
8
A
B
C
D
E
F

NOTE

1. (DC) INDICATES THE WAVEFORM OBSERVED AT DC RANGE
2. THE LINE ON THE PHOTOGRAPH SHOWN RIGHT SIDE INDICATES DC 0V LINE

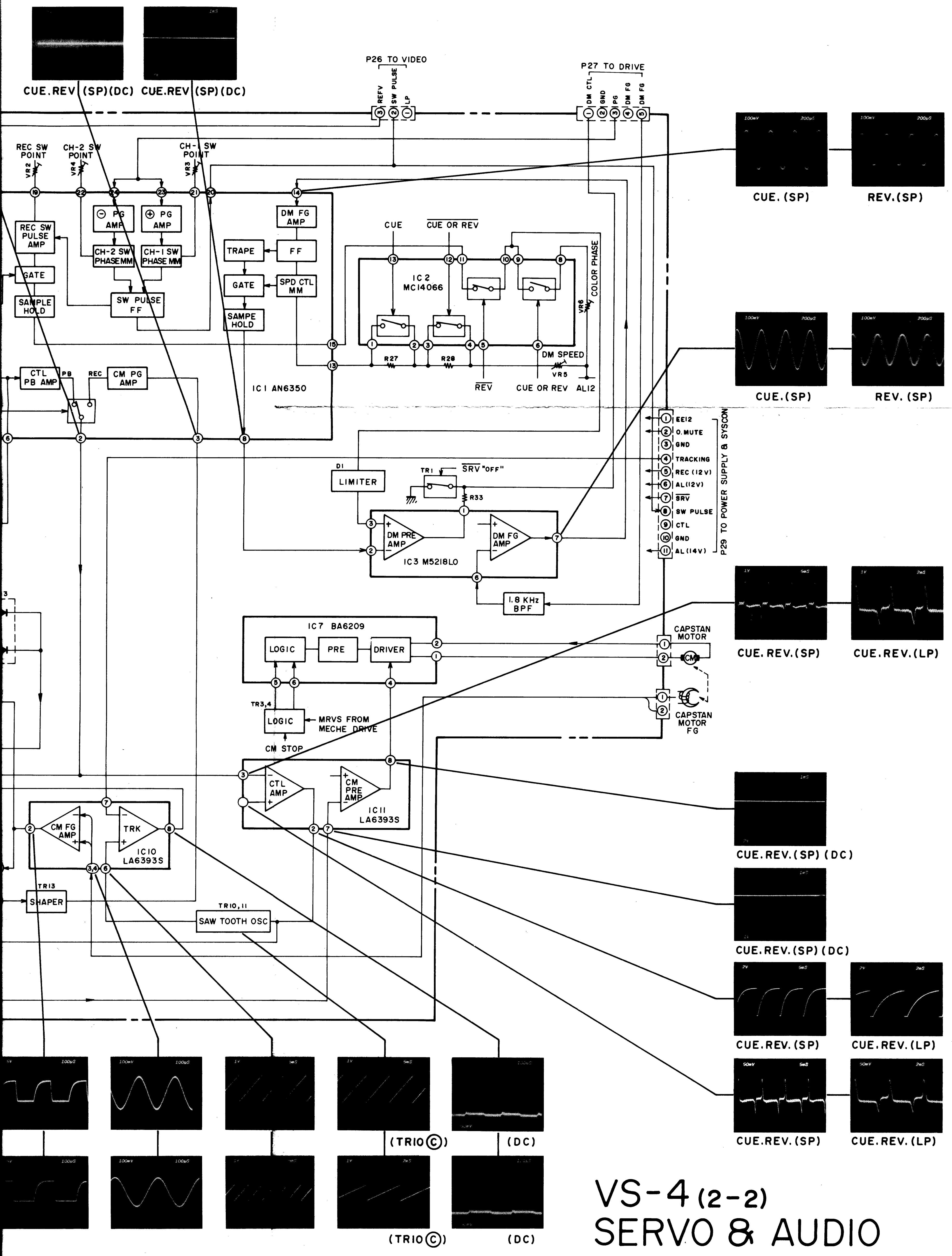

CUE.REV.(LP)
CUE.REV.(SP)
CUE.REV (SP)(DC)
CUE.REV (SP)(DC)
P26 TO VIDEO
REFV
SW PULSE
LP
P27 TO DRIVE
DM CTL
GND
PG
DM FG
DM FG
TR210
REC12 "ON"
REC LEVEL VR210
C221
TR207
LP "ON"
REC EQ
EE "L"
THER "H"
O. MUTE
MUTE CTL
REC AMP
IC201 LA7045
ALC DETECT
ALC
LINE AMP
REC 12V
15.625 KHz TRAP
70KHz TRAP
VR211 PB LEVEL
R211
TR205
LP "OFF"
REC SW POINT VR2
CH-2 SW POINT VR4
CH-1 SW POINT VR3
Vss AMP
MM
FF
TRAPE
REC CTL AMP
REC SW PULSE AMP
GATE
SAMPLE HOLD
⊖ PG AMP
⊕ PG AMP
CH-2 SW PHASE MM
CH-1 SW PHASE MM
SW PULSE FF
REC "ON"
CTL PB AMP
PB
REC
CM PG AMP
REC 12
DM FG AMP
TRAPE
FF
GATE
SPD CTL MM
SAMPE HOLD
IC1 AN6350
CUE
CUE OR REV
IC2 MC14066
COLOR PHASE
VR6
R27
R28
DM SPEED
VR5
REV
CUE OR REV
AL12
D1
LIMITER
TR1
SRV "OFF"
R33
DM PRE AMP
DM FG AMP
IC3 M5218LO
1.8 KHz BPF
EE12
O. MUTE
GND
TRACKING
REC (12V)
AL(12V)
SRV
SW PULSE
CTL
GND
AL (14V)
CUE (IC2 ⑬)
CUE OR REV (IC2 ⑥, TR5)
CUE OR REV (IC2 ⑫)
CUE OR REV (TR6)
REV (IC2 ⑤)
SP CUE OR REV
LP CUE OR REV
IC5
IC6
D3
IC7 BA6209
LOGIC
PRE
DRIVER
TR3,4
LOGIC
MRVS FROM MECHE DRIVE
CM STOP
CAPSTAN MOTOR
CM
CAPSTAN MOTOR FG
CTL AMP
CM PRE AMP
IC11 LA6393S
CUE/REV CM SPEED
VR8
AL12
D6
TR7, D7
LIMITER
CUE OR REV "OFF"
TR6
CUE OR REV "ON"
TR5
C33
IC9 TC4520BP
1/1, 1/3 or 1/5 COUNT DOWN
1/8 COUNT DOWN
CM FG AMP
TRK
IC10 LA6393S
TR13
SHAPER
TR10,11
SAW TOOTH OSC
SAMPLE AMP
TR8
AMP
TR9
REC "ON"
REC12 "ON"
(TR10 Ⓒ)
(DC)
(TR10 Ⓒ)
(DC)
D
E
F
G
H
I
J

VS-4

SERVO

BLOCK

NO.18-

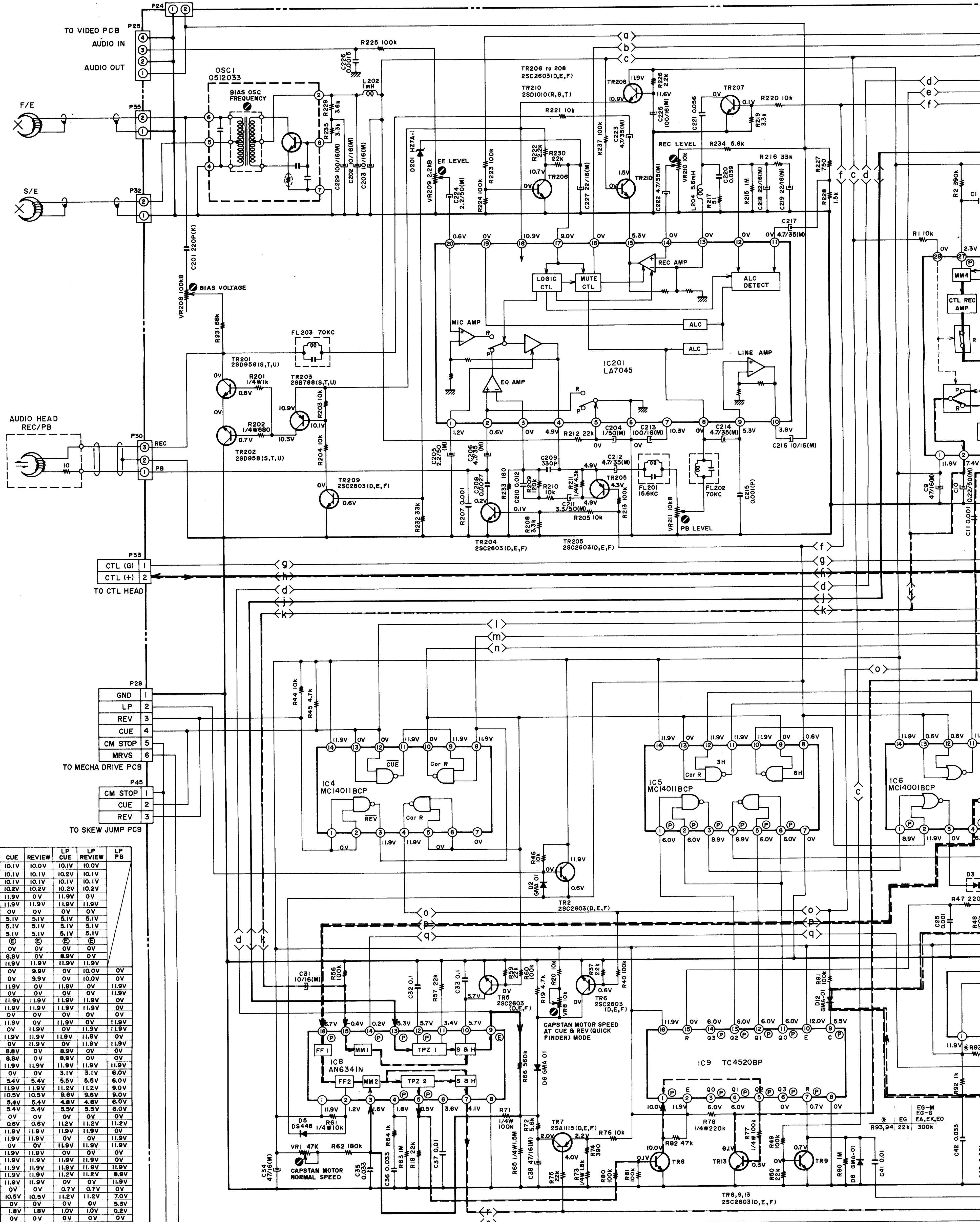

CUE.REV (SP)(DC)
CUE.REV (SP)(DC)
P26 TO VIDEO
REFV
SW PULSE
LP
P27 TO DRIVE
DM CTL
GND
PG
DM FG
DM FG
CUE. (SP)
REV.(SP)
REC SW POINT
VR2
CH-2 SW POINT
VR4
CH-1 SW POINT
VR3
⊖ PG AMP
⊕ PG AMP
REC SW PULSE AMP
CH-2 SW PHASE MM
CH-1 SW PHASE MM
GATE
SAMPLE HOLD
SW PULSE FF
DM FG AMP
TRAPE
FF
GATE
SPD CTL MM
SAMPE HOLD
CUE
CUE OR REV
IC 2 MC14066
COLOR PHASE
VR6
R27
R28
DM SPEED
VR5
REV
CUE OR REV
AL12
IC I AN6350
CUE.(SP)
REV. (SP)
CTL PB AMP
PB
REC
CM PG AMP
EE12
O. MUTE
GND
TRACKING
REC (12V)
AL(12V)
SRV
SW PULSE
CTL
GND
AL (14V)
P29 TO POWER SUPPLY & SYSCON
D1
LIMITER
TR1
SRV "OFF"
R33
DM PRE AMP
DM FG AMP
IC3 M5218LO
1.8 KHz BPF
IC7 BA6209
LOGIC
PRE
DRIVER
CAPSTAN MOTOR
CM
CAPSTAN MOTOR FG
CUE. REV. (SP)
CUE. REV. (LP)
TR3,4
LOGIC
MRVS FROM MECHE DRIVE
CM STOP
CTL AMP
CM PRE AMP
IC11 LA6393S
CM FG AMP
TRK
IC10 LA6393S
TR13
SHAPER
TR10, 11
SAW TOOTH OSC
CUE. REV. (SP) (DC)
CUE. REV. (SP) (DC)
CUE. REV. (SP)
CUE. REV. (LP)
CUE. REV. (SP)
CUE. REV. (LP)
(TRIO ©)
(DC)
(TRIO ©)
(DC)
F
G
H
I
J
K

VS-4 (2-2) SERVO & AUDIO BLOCK DIAGRAM

NO.18-4 830524A

VS-4

		DRUM MOTOR		CAPSTAN MOTOR	
		Ref	Comp	Ref	Comp
PHASE CONT.	REC	SYNC SEP V ———	DRUMPG – – –	SYNC SEP V ———	C/D SP:1/32 LP:1/16 FG – – – –
	PB	X-TAL V ———	DRUM PG – – –	NORMAL: X-TAL C/R: DC ———	CTL – – – –
SPEED CONT.		———		– – – –	

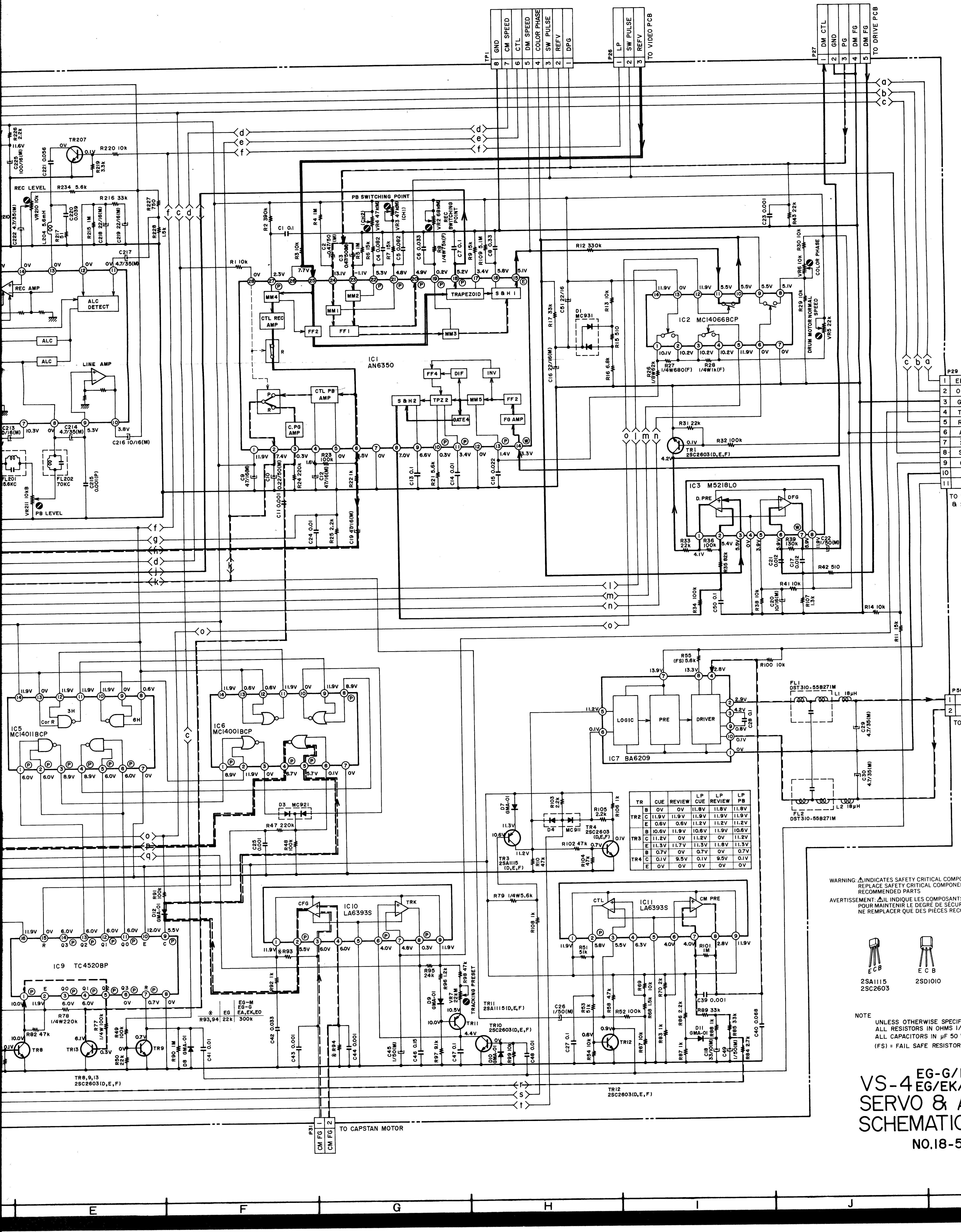


TO RF BOOSTER AUDIO OUT
P24
TO VIDEO PCB
P25
AUDIO IN
AUDIO OUT
F/E
P55
S/E
P32
OSC1 0512033
BIAS OSC FREQUENCY
R225 100k
C226 0.0015
L202 1mH
R229 3.6k
R235 3.3k
C229 100/16(M)
C202 10/16(M)
C203 10/16(M)
C201 220P(K)
VR208 100kB
BIAS VOLTAGE
R231 68k
FL203 70KC
TR201 2SD958(S,T,U)
R201 1/4W1k
TR203 2SB788(S,T,U)
R202 1/4W680
TR202 2SD958(S,T,U)
R203 10k
R204 10k
TR209 2SC2603(D,E,F)
AUDIO HEAD REC/PB
P30
REC
PB
TR206 to 208 2SC2603(D,E,F)
TR210 2SD1010(R,S,T)
D201 HZ7A-1
VR209 2.2kB
EE LEVEL
C224 2.2/50(M)
R224 100k
R223 100k
R221 10k
R222 2.2k
R230 22k
TR206
C227 22/16(M)
R237 100k
C223 4.7/35(M)
TR208
R228 22k
C225 100/16(M)
TR207
R220 10k
R219 3.3k
C221 0.056
TR210
REC LEVEL
VR210 10k
R234 5.6k
R216 33k
C222 4.7/35(M)
L204 5.6mH
R217 2.1
C220 0.039
R215 1M
C218 22/16(M)
C219 22/16(M)
R227 750
R226 1.5k
C217 4.7/35(M)
LOGIC CTL
MUTE CTL
REC AMP
ALC DETECT
MIC AMP
ALC
EQ AMP
IC201 LA7045
LINE AMP
R212 22k
C204 1/50(M)
C213 100/16(M)
C214 4.7/35(M)
C216 10/16(M)
C205 2.2/50(M)
C206 4.7/35(M)
C209 330P
C212 4.7/35(M)
R211 1/4W 4.3k
TR205
C208 0.027
C210 0.012
R209 120k
R210 10k
C211 3.3/50(M)
R205 10k
R233 180
R207 0.001
R208 3.3k
R213 100k
FL201 15.6KC
FL202 70KC
VR211 10kB
PB LEVEL
C215 0.001(P)
R232 33k
TR204 2SC2603(D,E,F)
TR205 2SC2603(D,E,F)
P33
CTL (G)
CTL (+)
TO CTL HEAD
P28
GND
LP
REV
CUE
CM STOP
MRVS
TO MECHA DRIVE PCB
P45
CM STOP
CUE
REV
TO SKEW JUMP PCB
R44 10k
R45 4.7k
IC4 MC14011BCP
CUE
Cor R
REV
R46 10k
D2 GMA 01
TR2 2SC2603(D,E,F)
IC5 MC14011BCP
3H
6H
IC6 MC14001BCP
C31 10/16(M)
R56 100k
C32 0.1
R57 22k
C33 0.1
TR5 2SC2603 (D,E,F)
R59 22k
R60 100k
R19 4.7k
R20 10k
VR8 10k
R37 22k
TR6 2SC2603 (D,E,F)
R40 100k
CAPSTAN MOTOR SPEED AT CUE & REV (QUICK FINDER) MODE
FF1
MM1
TPZ 1
S & H
IC8 AN6341N
FF2
MM2
TPZ 2
R66 560k
D6 GMA 01
D5 DS448
R61 1/4W10k
VR1 47K
R62 180k
CAPSTAN MOTOR NORMAL SPEED
C34 47/16(M)
C35 0.033
C36 0.033
R64 1k
R63 1M
R18 12k
C37 0.01
R71 1/4W 100k
R72 5.6k
TR7 2SA1115(D,E,F)
R76 10k
R65 1/4W1.5M
C38 47/6(M)
R75 22k
R73 1/4W1.8k
R74 390
R80 100k
R81 100k
IC9 TC4520BP
R91 100k
D12 GMA-01
R78 1/4W220k
R82 47k
TR8
R77 1/4W 100k
TR13
R49 100k
R50 22k
TR9
R90 1M
D8 GMA-01
C41 0.01
TR8,9,13 2SC2603(D,E,F)
* R93,94 EG 22k EG-M EG-G EA,EK,EO 300k
C42 0.033
R92 1k
R47 220
R48
C25 0.001
D3
R1 10k
R2 390k
MM4
CTL REC AMP
C9 47/16(M)
C10 0.22/50(M)
C11 0.001

IC	PIN	CUE	REVIEW	LP CUE	LP REVIEW	LP PB
IC2	①	10.1V	10.0V	10.1V	10.0V	
	②	10.1V	10.1V	10.2V	10.1V	
	③	10.1V	10.1V	10.1V	10.1V	
	④	10.2V	10.2V	10.2V	10.2V	
	⑤	11.9V	0V	11.9V	0V	
	⑥	11.9V	11.9V	11.9V	11.9V	
	⑦	0V	0V	0V	0V	
	⑧	5.1V	5.1V	5.1V	5.1V	
	⑨	5.1V	5.1V	5.1V	5.1V	
	⑩	5.1V	5.1V	5.1V	5.1V	
	⑪	Ⓔ	Ⓔ	Ⓔ	Ⓔ	
	⑫	0V	0V	0V	0V	
	⑬	8.8V	0V	8.9V	0V	
	⑭	11.9V	11.9V	11.9V	11.9V	
IC4	①	0V	9.9V	0V	10.0V	0V
	②	0V	9.9V	0V	10.0V	0V
	③	11.9V	0V	11.9V	0V	11.9V
	④	0V	0V	0V	0V	11.9V
	⑤	11.9V	11.9V	11.9V	11.9V	0V
	⑥	11.9V	11.9V	11.9V	11.9V	0V
	⑦	0V	0V	0V	0V	0V
	⑧	11.9V	0V	11.9V	0V	11.9V
	⑨	0V	11.9V	0V	11.9V	11.9V
	⑩	11.9V	11.9V	11.9V	11.9V	0V
	⑪	0V	11.9V	0V	11.9V	11.9V
	⑫	8.8V	0V	8.9V	0V	0V
	⑬	8.8V	0V	8.9V	0V	0V
	⑭	11.9V	11.9V	11.9V	11.9V	11.9V
IC5	①	0V	0V	3.1V	3.1V	6.0V
	②	5.4V	5.4V	5.5V	5.5V	6.0V
	③	11.9V	11.9V	11.2V	11.2V	9.0V
	④	10.5V	10.5V	9.6V	9.6V	9.0V
	⑤	5.4V	5.4V	4.8V	4.8V	6.0V
	⑥	5.4V	5.4V	5.5V	5.5V	6.0V
	⑦	0V	0V	0V	0V	0V
	⑧	0.6V	0.6V	11.2V	11.2V	11.2V
	⑨	11.9V	11.9V	11.9V	11.9V	0V
	⑩	11.9V	11.9V	0V	0V	11.9V
	⑪	0V	0V	11.9V	11.9V	11.9V
	⑫	11.9V	11.9V	0V	0V	0V
	⑬	11.9V	11.9V	11.9V	11.9V	0V
	⑭	11.9V	11.9V	11.9V	11.9V	11.9V
IC6	①	11.9V	11.9V	11.2V	11.2V	8.9V
	②	11.9V	11.9V	0V	0V	11.9V
	③	0V	0V	0.7V	0.7V	0V
	④	10.5V	10.5V	11.2V	11.2V	7.0V
	⑤	0V	0V	0V	0V	5.3V
	⑥	1.8V	1.8V	1.0V	1.0V	0.2V
	⑦	0V	0V	0V	0V	0V
	⑧	10.5V	10.5V	9.5V	9.5V	8.9V
	⑨	0V	0V	11.9V	11.9V	11.9V
	⑩	0V	1.4V	0V	0V	0V
	⑪	0V	11.9V	0V	0V	0V
	⑫	0.6V	0.6V	11.2V	11.2V	11.2V
	⑬	0.6V	0.6V	11.2V	11.2V	11.2V
	⑭	11.9V	11.9V	11.9V	11.9V	11.9V

SERVO/AUDIO PCB V1017B5010

A	B	C	D	E	F


TP1
GND
CM SPEED
CTL
DM SPEED
COLOR PHASE
SW PULSE
REFV
DPG
P26
LP
SW PULSE
REFV
TO VIDEO PCB
P27
DM CTL
GND
PG
DM FG
DM FG
TO DRIVE PCB
TR207
REC LEVEL
VR210 10k
REC AMP
ALC DETECT
ALC
LINE AMP
FL201 15.6KC
FL202 70KC
VR211 10kB
PB LEVEL
PB SWITCHING POINT
VR4 47k(M) (CH2)
VR3 47k(M) (CH1)
VR2 68k(M) REC SWITCHING POINT
IC1 AN6350
MM4
CTL REC AMP
MM1
MM2
FF1
FF2
MM3
TRAPEZOID
S & H 1
CTL PB AMP
C.PG AMP
S & H2
TPZ 2
GATE4
FF4
DIF
INV
MM5
FF 2
FG AMP
D1 MC931
IC2 MC14066BCP
VR6 10k COLOR PHASE
VR5 22k DRUM MOTOR NORMAL SPEED
P29
TR1 2SC2603(D,E,F)
IC3 M5218L0
D. PRE
DFG
IC5 MC14011BCP
IC6 MC14001BCP
D3 MC921
IC7 BA6209
LOGIC
PRE
DRIVER
FL1 DST310-55B271M
L1 18µH
FL2 DST310-55B271M
L2 18µH
P50
TR3 2SA1115 (D,E,F)
D7 GMA-01
D4 MC911
TR4 2SC2603 (D,E,F)
IC9 TC4520BP
TR8,9,13 2SC2603(D,E,F)
IC10 LA6393S
CFG
TRK
VR7 22k(M) TRACKING PRESET
TR11 2SA1115(D,E,F)
TR10 2SC2603(D,E,F)
D9 GMA-01
D10 GMA-01
IC11 LA6393S
CTL
CM PRE
TR12 2SC2603(D,E,F)
D11 GMA-01
D12 GMA-01
D8 GMA-01
P31
CM FG
CM FG
TO CAPSTAN MOTOR
E C B
2SA1115
2SC2603
E C B
2SD1010
E
F
G
H
I
J

TR		CUE	REVIEW	LP CUE	LP REVIEW	LP PB
TR2	B	0V	0V	11.8V	11.8V	11.8V
	C	11.9V	11.9V	11.9V	11.9V	11.9V
	E	0.6V	0.6V	11.2V	11.2V	11.2V
TR3	B	10.6V	11.9V	10.6V	11.9V	10.6V
	C	11.2V	0V	11.2V	0V	11.2V
	E	11.3V	11.7V	11.3V	11.8V	11.3V
TR4	B	0.7V	0V	0.7V	0V	0.7V
	C	0.1V	9.5V	0.1V	9.5V	0.1V
	E	0V	0V	0V	0V	0V

※	EG	EG-M EG-G EA, EK, EO
R93,94	22k	300k

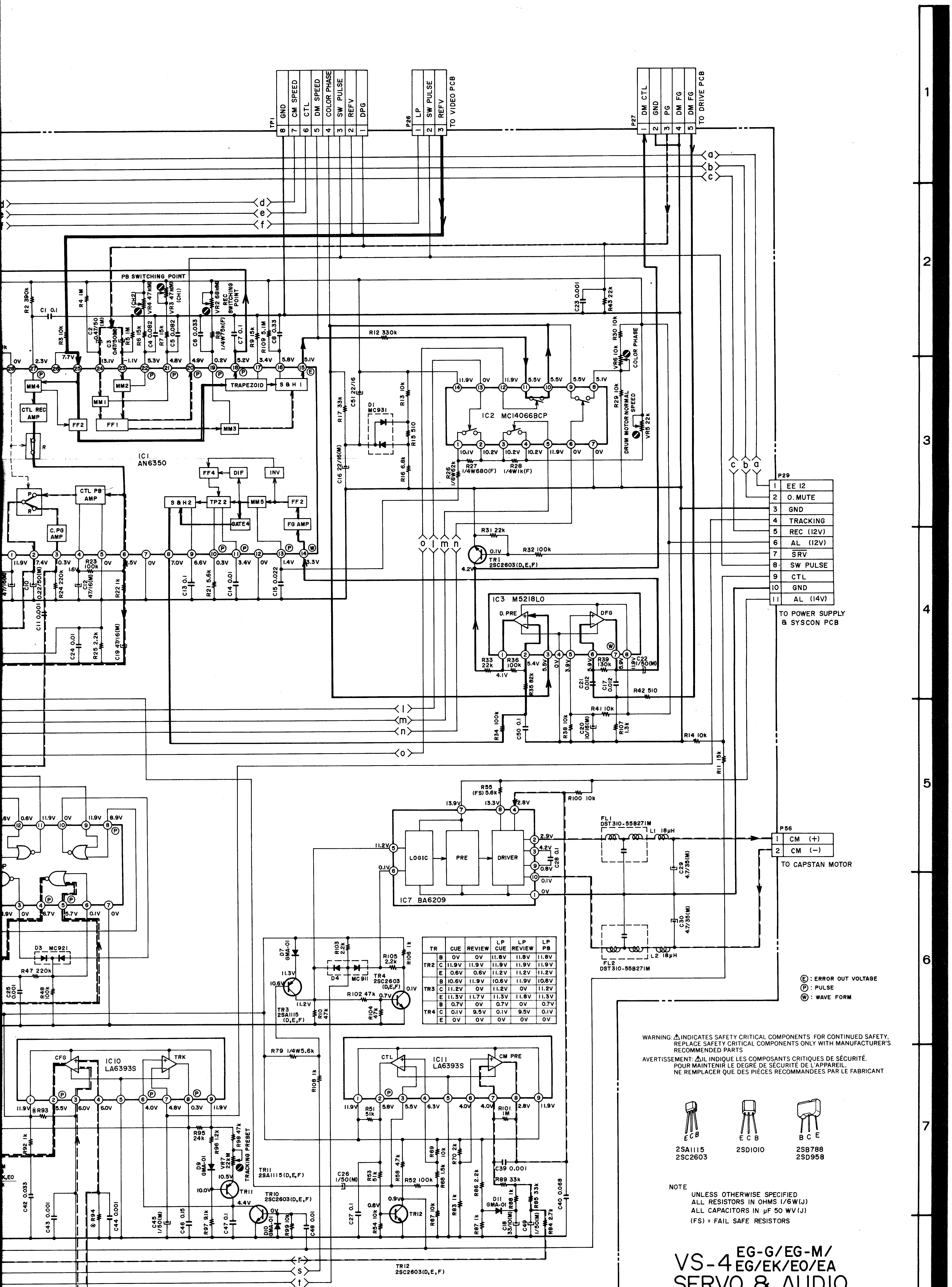
WARNING: ⚠INDICATES SAFETY CRITICAL COMPO
REPLACE SAFETY CRITICAL COMPONE
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS
POUR MAINTENIR LE DEGRÉ DE SÉCUR
NE REMPLACER QUE DES PIÈCES REC

NOTE
UNLESS OTHERWISE SPECIF
ALL RESISTORS IN OHMS 1/
ALL CAPACITORS IN µF 50
(FS) = FAIL SAFE RESISTOR

VS-4 EG-G/ EG/EK
SERVO & A
SCHEMATIC

NO.18-5


TP1
GND
CM SPEED
CTL
DM SPEED
COLOR PHASE
SW PULSE
REFV
DPG
P26
LP
SW PULSE
REFV
TO VIDEO PCB
P27
DM CTL
GND
PG
DM FG
DM FG
TO DRIVE PCB
PB SWITCHING POINT
VR4 47k(M) (CH2)
VR3 47k(M) (CH1)
VR2 68k(M) REC SWITCHING POINT
TRAPEZOID
S & H 1
MM4
MM2
MM1
FF1
FF2
MM3
CTL REC AMP
IC1 AN6350
FF4
DIF
INV
S & H2
TPZ 2
MM5
FF 2
GATE4
FG AMP
CTL PB AMP
C.PG AMP
IC2 MC14066BCP
D1 MC931
VR6 10k COLOR PHASE
DRUM MOTOR NORMAL SPEED VR5 22k
TR1 2SC2603(D,E,F)
IC3 M5218L0
D. PRE
DFG
P29
1 EE 12
2 O. MUTE
3 GND
4 TRACKING
5 REC (12V)
6 AL (12V)
7 SRV
8 SW PULSE
9 CTL
10 GND
11 AL (14V)
TO POWER SUPPLY & SYSCON PCB
LOGIC
PRE
DRIVER
IC7 BA6209
FL1 DST310-55B271M
L1 18μH
FL2 DST310-55B271M
L2 18μH
P56
1 CM (+)
2 CM (−)
TO CAPSTAN MOTOR
D3 MC921
D7 GMA-01
D4 MC911
TR3 2SA1115 (D,E,F)
TR4 2SC2603 (D,E,F)
IC10 LA6393S
CFG
TRK
IC11 LA6393S
CTL
CM PRE
VR7 22k(M) TRACKING PRESET
TR11 2SA1115(D,E,F)
TR10 2SC2603(D,E,F)
D9 GMA-01
D10 GMA-01
D11 GMA-01
TR12 2SC2603(D,E,F)
P31
CM FG
CM FG
TO CAPSTAN MOTOR
E C B
2SA1115
2SC2603
E C B
2SD1010
B C E
2SB788
2SD958
G
H
I
J
K
1
2
3
4
5
6
7
8

TR		CUE	REVIEW	LP CUE	LP REVIEW	LP PB
TR2	B	0V	0V	11.8V	11.8V	11.8V
	C	11.9V	11.9V	11.9V	11.9V	11.9V
	E	0.6V	0.6V	11.2V	11.2V	11.2V
TR3	B	10.6V	11.9V	10.6V	11.9V	10.6V
	C	11.2V	0V	11.2V	0V	11.2V
	E	11.3V	11.7V	11.3V	11.8V	11.3V
TR4	B	0.7V	0V	0.7V	0V	0.7V
	C	0.1V	9.5V	0.1V	9.5V	0.1V
	E	0V	0V	0V	0V	0V

Ⓔ : ERROR OUT VOLTAGE
Ⓟ : PULSE
Ⓦ : WAVE FORM

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

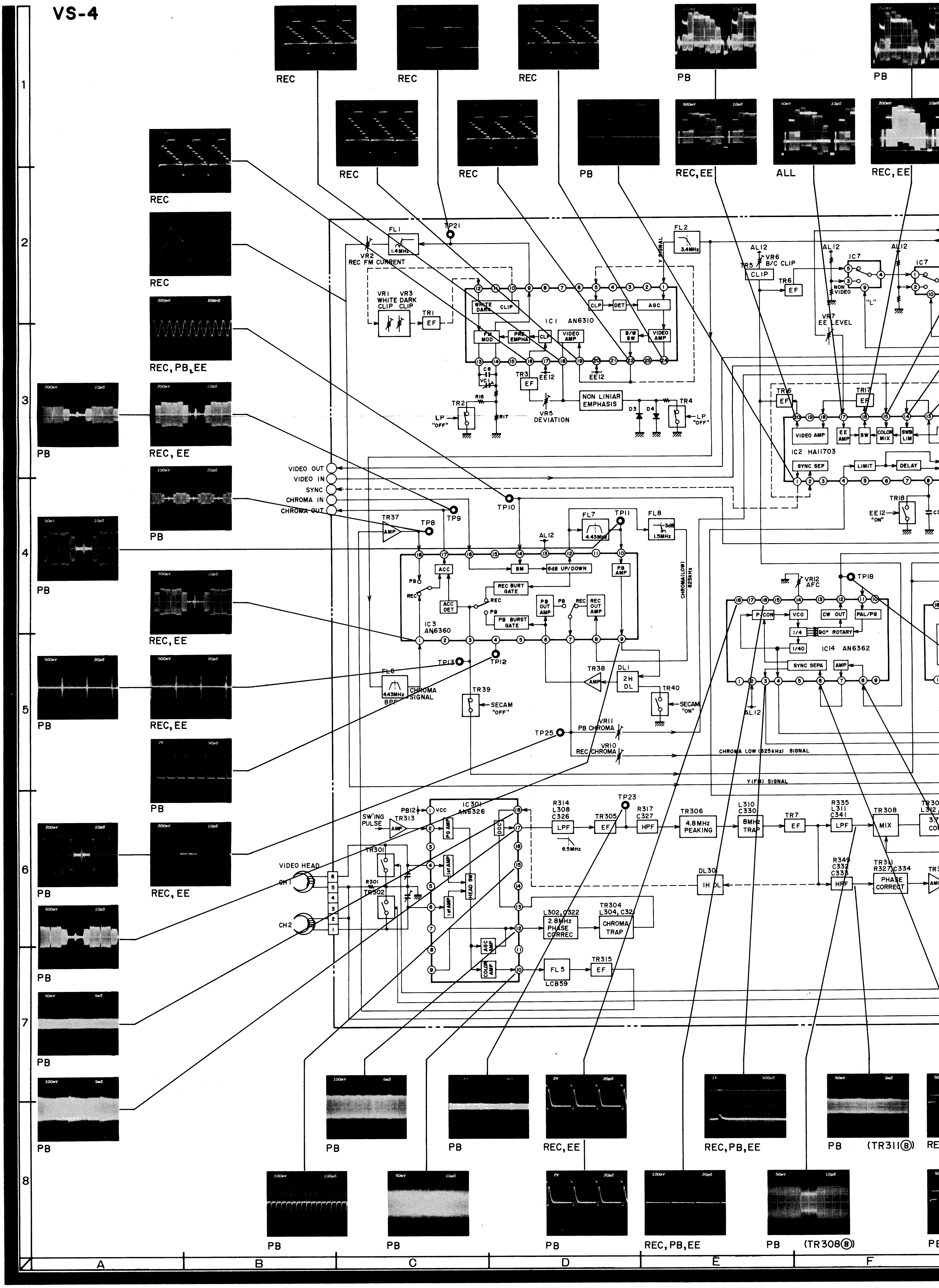
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

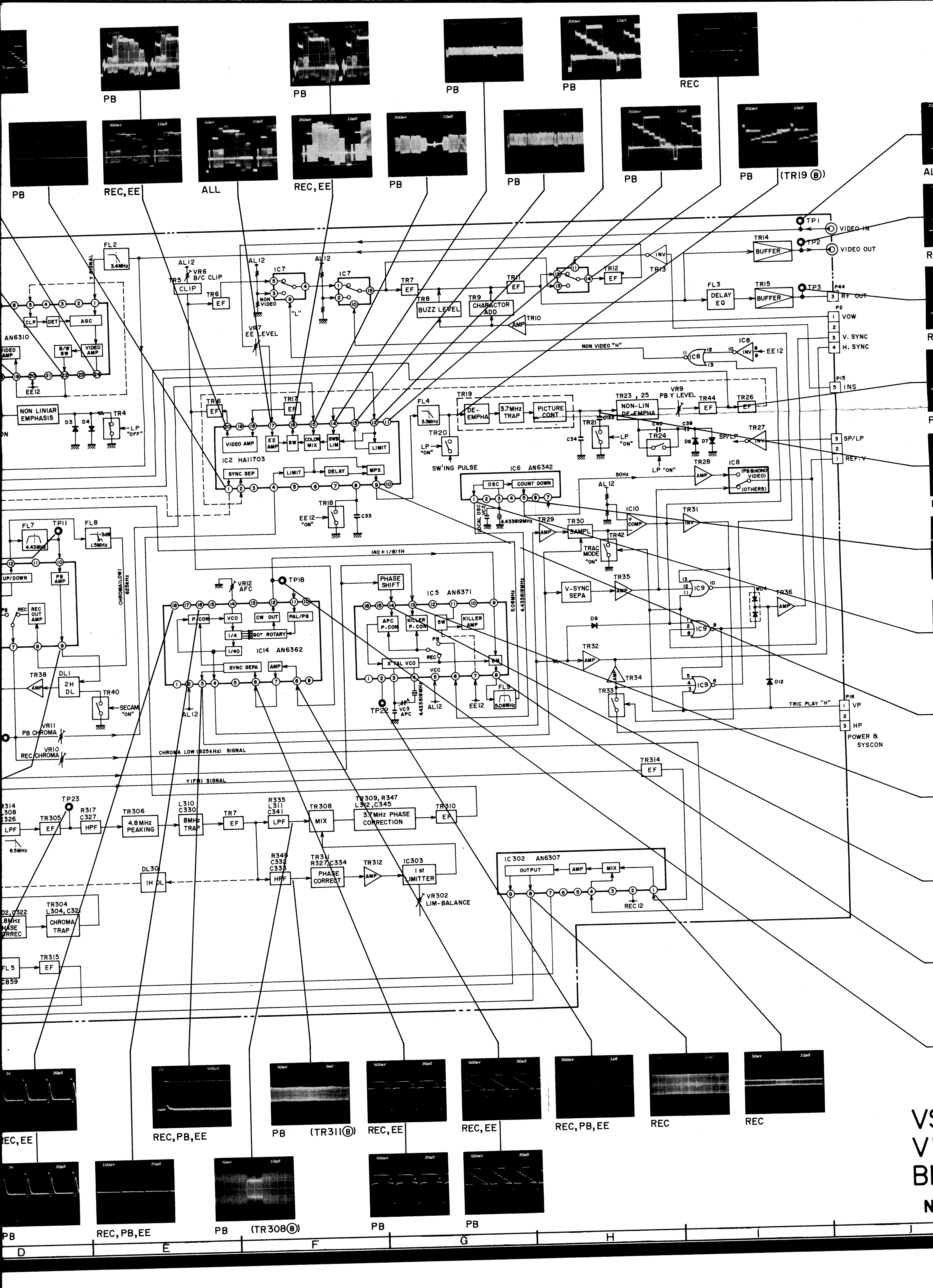
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) = FAIL SAFE RESISTORS

VS-4 EG-G/EG-M/ EG/EK/EO/EA
SERVO & AUDIO SCHEMATIC DIAGRAM

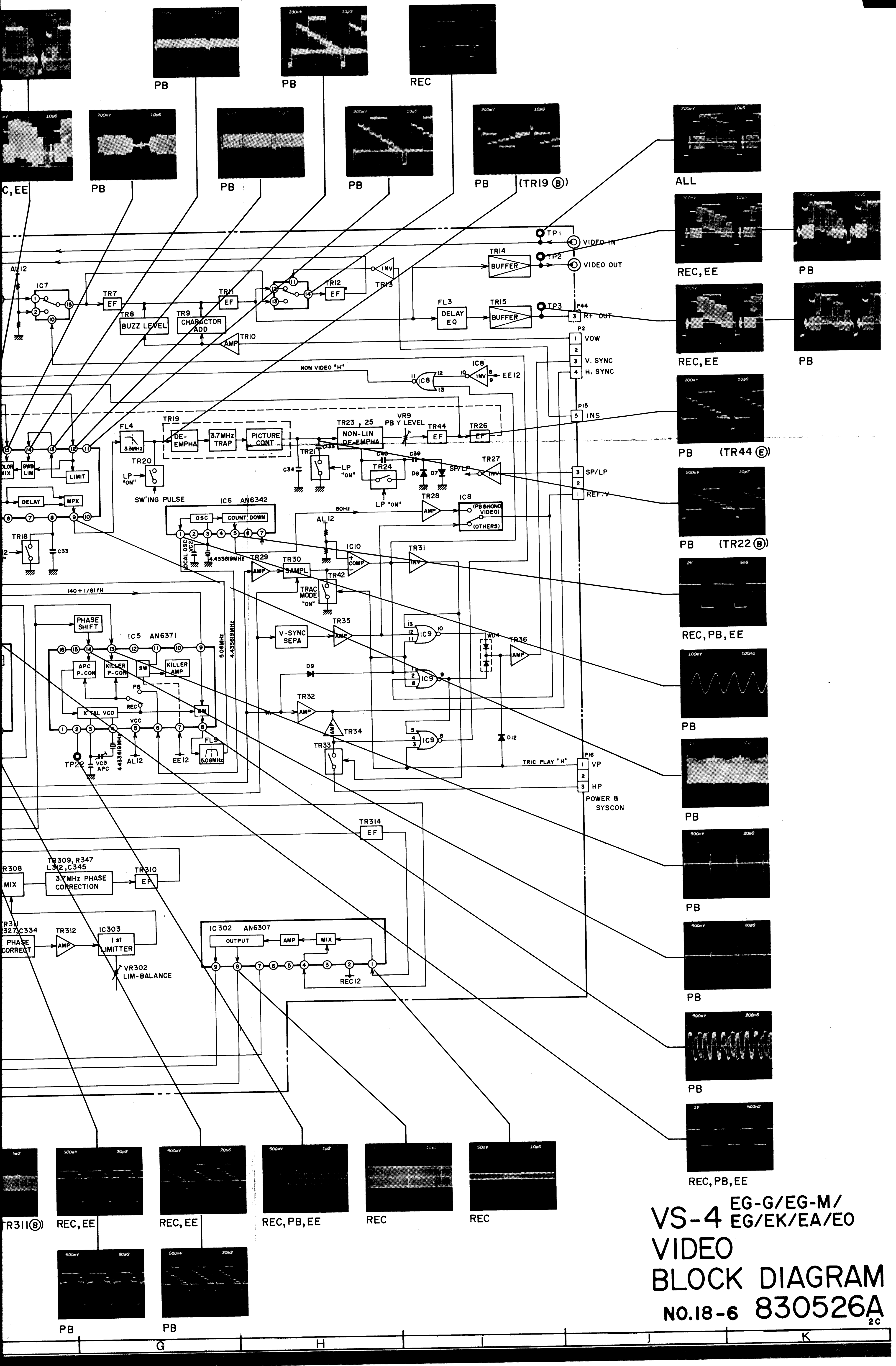
NO.18-5 830525A
4C

VS-4


REC
REC
REC
PB
PB
REC
REC
PB
REC,EE
ALL
REC,EE
REC
REC
REC,PB,EE
PB
REC,EE
PB
PB
PB
REC,EE
PB
REC,EE
PB
PB
REC,EE
PB
PB
PB
TP21
FL1
1.4MHz
VR2
REC FM CURRENT
VR1 VR3
WHITE DARK
CLIP CLIP
TR1
EF
WHITE DARK
CLIP
FM MOD
PRE EMPHA
CLP
VIDEO AMP
IC1 AN6310
CLP
DET
AGC
B/W SW
VIDEO AMP
FL2
3.4MHz
Y SIGNAL
EE12
C6
VC1
R16
R17
TR2
LP "OFF"
TR3
EF
VR5
DEVIATION
NON LINIAR EMPHASIS
D3
D4
TR4
LP "OFF"
AL12
VR6
B/C CLIP
TR5
CLIP
TR6
EF
AL12
IC7
NON VIDEO
"L"
VR7
EE LEVEL
AL12
IC7
TR16
EF
TR17
EF
VIDEO AMP
EE AMP
SW
COLOR MIX
SWB LIM
IC2 HA11703
SYNC SEP
LIMIT
DELAY
TR18
EE12 "ON"
VIDEO OUT
VIDEO IN
SYNC
CHROMA IN
CHROMA OUT
TR37
AMP
TP8
TP9
TP10
FL7
4.43MHz
TP11
FL8
-3dB
1.5MHz
AL12
ACC
BM
6dB UP/DOWN
PB AMP
PB
REC
ACC DET
REC BURST GATE
REC
PB
PB OUT AMP
PB
REC
REC OUT AMP
PB BURST GATE
IC3
AN6360
CHROMA(LOW) 625kHz
TP13
TP12
FL6
4.43MHz
BPF
CHROMA SIGNAL
TR39
SECAM "OFF"
TR38
AMP
DL1
2H DL
TR40
SECAM "ON"
TP25
VR11
PB CHROMA
VR10
REC CHROMA
CHROMA LOW (625kHz) SIGNAL
Y(FM) SIGNAL
VRI2
AFC
TP18
P.CON
VCO
CW OUT
PAL/PG
1/4
90° ROTARY
1/40
IC14 AN6362
SYNC SEPA
AMP
AL12
TP23
PB12
VCC
IC301
AN6326
SW'ING PULSE
TR313
AMP
PG AMP
TR301
1st AMP
HEAD SW
R301
TR302
1st AMP
DOC
AGC AMP
COLOR AMP
VIDEO HEAD
CH1
CH2
R314
L308
C326
LPF
6.5MHz
TR305
EF
R317
C327
HPF
TR306
4.8MHz PEAKING
L310
C330
8MHz TRAP
TR7
EF
R335
L311
C341
LPF
TR308
MIX
TR30
L312
DL301
1H DL
R349
C332
C333
HPF
TR311
R327,C334
PHASE CORRECT
TR3
AMP
L302,C322
2.8MHz PHASE CORREC
TR304
L304,C32
CHROMA TRAP
FL5
LCB59
TR315
EF
PB
PB
REC,EE
REC,PB,EE
PB
(TR311Ⓑ)
RE
PB
PB
PB
REC,PB,EE
PB
(TR308Ⓑ)
PE
1
2
3
4
5
6
7
8
A
B
C
D
E
F


PB
PB
PB
PB
REC
PB
REC, EE
ALL
REC, EE
PB
PB
PB
PB
(TR19 Ⓑ)
AL
TP1
VIDEO IN
TP2
VIDEO OUT
TR14
BUFFER
TR13
INV
FL3
DELAY EQ
TR15
BUFFER
TP3
P44
RF OUT
P2
VOW
V. SYNC
H. SYNC
IC8
INV
EE 12
NON VIDEO "H"
P15
INS
FL2
3.4MHz
Y SIGNAL
AL12
VR6
B/C CLIP
TR5
CLIP
TR6
EF
IC7
NON VIDEO
"L"
TR7
EF
TR8
BUZZ LEVEL
TR9
CHARACTOR ADD
TR10
AMP
TR11
EF
TR12
EF
VR7
EE LEVEL
AN6310
CLP
DET
AGC
B/W SW
VIDEO AMP
EE12
NON LINIAR EMPHASIS
D3
D4
TR4
LP "OFF"
TR16
EF
TR17
EF
VIDEO AMP
EE AMP
SW
COLOR MIX
SWB LIM
LIMIT
IC2 HA11703
SYNC SEP
LIMIT
DELAY
MPX
TR18
EE12 "ON"
C33
FL4
3.3MHz
TR19
DE-EMPHA
3.7MHz TRAP
PICTURE CONT
TR20
LP "ON"
SW'ING PULSE
TR23, 25
NON-LIN DE-EMPHA
VR9
PB Y LEVEL
TR44
EF
TR26
EF
TR21
C133
C34
LP "ON"
TR24
C40
C39
D6
D7
SP/LP
TR27
INV
LP "ON"
SP/LP
REF.V
TR28
AMP
IC8
(PB&NONO VIDEO)
(OTHERS)
IC6 AN6342
OSC
COUNT DOWN
50Hz
AL12
LOCAL OSC
VC2
4.433619MHz
TR29
AMP
TR30
SAMPL
TRAC MODE "ON"
TR42
IC10
COMP
TR31
INV
FL7
4.43MHz
TP11
FL8
-3dB
1.5MHz
UP/DOWN
PB AMP
REC
REC OUT AMP
CHROMA (LOW) 625kHz
TR38
AMP
DL1
2H DL
TR40
SECAM "ON"
VR11
PB CHROMA
VR10
REC CHROMA
CHROMA LOW (625kHz) SIGNAL
Y(FM) SIGNAL
VR12
AFC
TP18
P-CON
VCO
CW OUT
PAL/PG
1/4
90° ROTARY
1/40
IC14 AN6362
SYNC SEPA
AMP
AL12
(40 + 1/8) fH
PHASE SHIFT
IC5 AN6371
APC P-CON
KILLER P-CON
SW
KILLER AMP
PB
REC
X'TAL VCO
BM
VCC
FL9
5.06MHz
TP22
VC3
APC
4.433619MHz
AL12
EE12
5.06MHz
4.433619MHz
V-SYNC SEPA
TR35
AMP
IC9
WD4
TR36
AMP
D9
IC9
TR32
AMP
TR34
AMP
TR33
IC9
D12
TRIC PLAY "H"
P16
VP
HP
POWER & SYSCON
TR314
EF
R314
C308
C326
LPF
6.5MHz
TP23
TR305
EF
R317
C327
HPF
TR306
4.8MHz PEAKING
L310
C330
8MHz TRAP
TR7
EF
R335
L311
C341
LPF
TR308
MIX
TR309, R347
L312, C345
3.7MHz PHASE CORRECTION
TR310
EF
DL301
1H DL
R349
C332
C333
HPF
TR311
R327, C334
PHASE CORRECT
TR312
AMP
IC303
1st LIMITTER
VR302
LIM-BALANCE
IC302 AN6307
OUTPUT
AMP
MIX
REC12
TR304
L304, C32
CHROMA TRAP
C302, C322
.8MHz
PHASE CORREC
FL5
CB59
TR315
EF
REC, EE
REC, PB, EE
PB
(TR311 Ⓑ)
REC, EE
REC, EE
REC, PB, EE
REC
REC
PB
REC, PB, EE
PB
(TR308 Ⓑ)
PB
PB
D
E
F
G
H
I
J
2V
20µS
1V
500µS
50mV
5mS
500mV
20µS
500mV
1µS
50mV
10µS
100mV
20µS
200mV
10µS
500mV
10µS

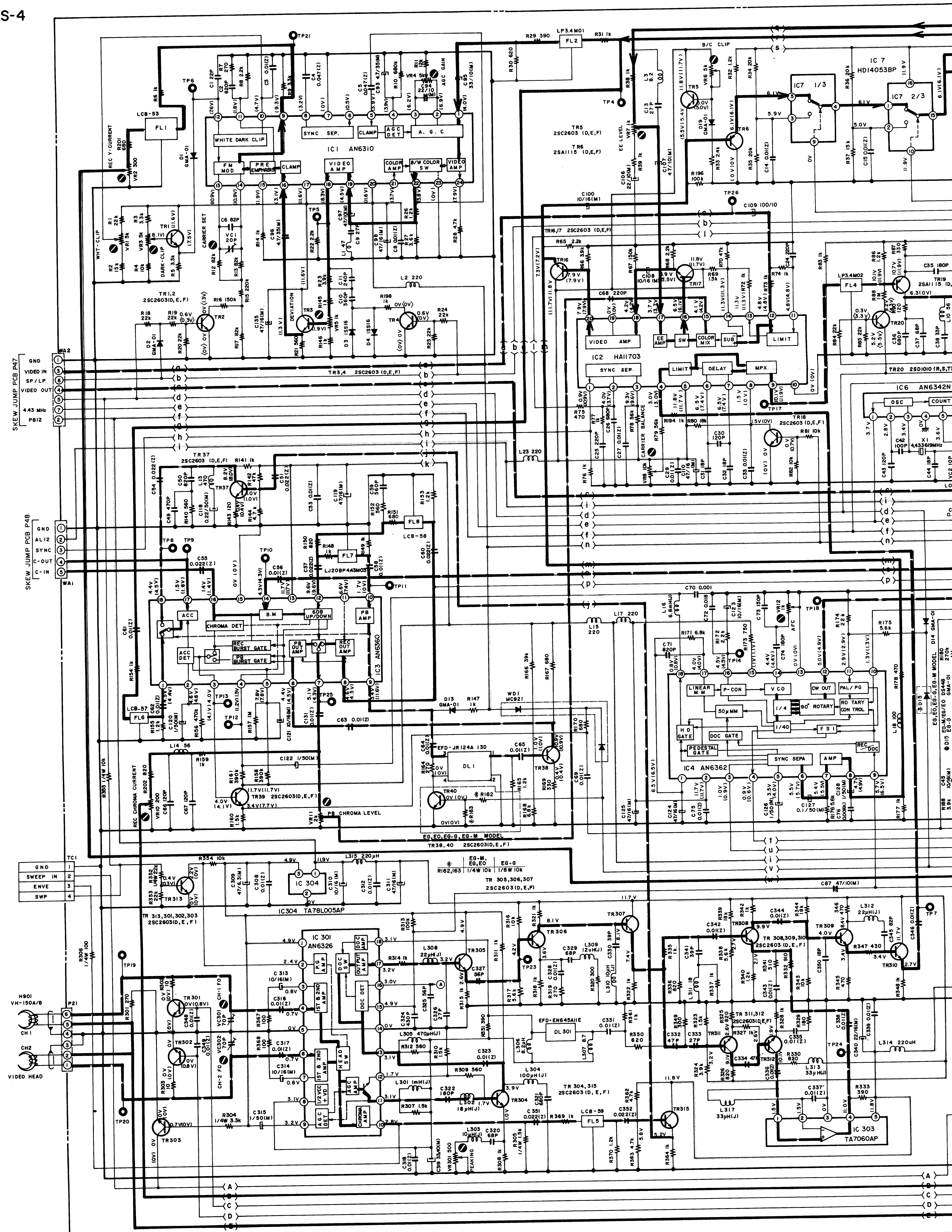
VS
V
B
N


PB
PB
REC
C, EE
PB
PB
PB
PB
(TR19 Ⓑ)
ALL
REC, EE
PB
REC, EE
PB
TP1
VIDEO IN
TP2
VIDEO OUT
TR14
BUFFER
TP3
P44
3 RF OUT
FL3
DELAY EQ
TR15
BUFFER
AL12
IC7
TR7
EF
TR8
BUZZ LEVEL
TR9
CHARACTOR ADD
TR10
AMP
TR11
EF
TR12
EF
TR13
INV
P2
1 VOW
2
3 V. SYNC
4 H. SYNC
NON VIDEO "H"
IC8
INV
EE12
P15
5 INS
FL4
3.3MHz
TR19
DE-EMPHA
3.7MHz TRAP
PICTURE CONT
TR23, 25
NON-LIN DE-EMPHA
VR9
PB Y LEVEL
TR44
EF
TR26
EF
TR20
LP "ON"
SW'ING PULSE
TR21
C133
C34
LP "ON"
C40
C39
TR24
D6
D7
LP "ON"
SP/LP
TR27
INV
3 SP/LP
2
1 REF. V
COLOR MIX
SWB LIM
LIMIT
DELAY
MPX
TR18
C33
IC6 AN6342
OSC
COUNT DOWN
LOCAL OSC VC2
4.433619MHz
50Hz
AL12
TR28
AMP
IC8
(PB&MONO VIDEO)
(OTHERS)
IC10
COMP
TR31
INV
TR29
AMP
TR30
SAMPL
TR42
TRAC MODE "ON"
(40+1/8) fH
PHASE SHIFT
IC5 AN6371
APC P-CON
KILLER P-CON
SW
KILLER AMP
PB
REC
X'TAL VCO
BM
VCC
AL12
EE12
FL9
5.06MHz
4.433619MHz
VC3 APC
TP22
5.06MHz
4.433619MHz
V-SYNC SEPA
TR35
AMP
IC9
W04
TR36
AMP
D9
IC9
TR32
AMP
TR34
AMP
TR33
IC9
D12
TRIC PLAY "H"
P16
1 VP
2
3 HP
POWER & SYSCON
TR314
EF
TR308
MIX
TR309, R347
L312, C345
3.7MHz PHASE CORRECTION
TR310
EF
TR311
C327, C334
PHASE CORRECT
TR312
AMP
IC303
1st LIMITTER
VR302
LIM-BALANCE
IC302 AN6307
OUTPUT
AMP
MIX
REC12
PB
(TR44 Ⓔ)
PB
(TR22 Ⓑ)
REC, PB, EE
PB
PB
PB
PB
PB
REC, PB, EE
TR311 Ⓑ
REC, EE
REC, EE
REC, PB, EE
REC
REC
PB
PB
G
H
I
J
K

VS-4 EG-G/EG-M/
EG/EK/EA/EO
VIDEO
BLOCK DIAGRAM

NO.18-6 830526A 2C

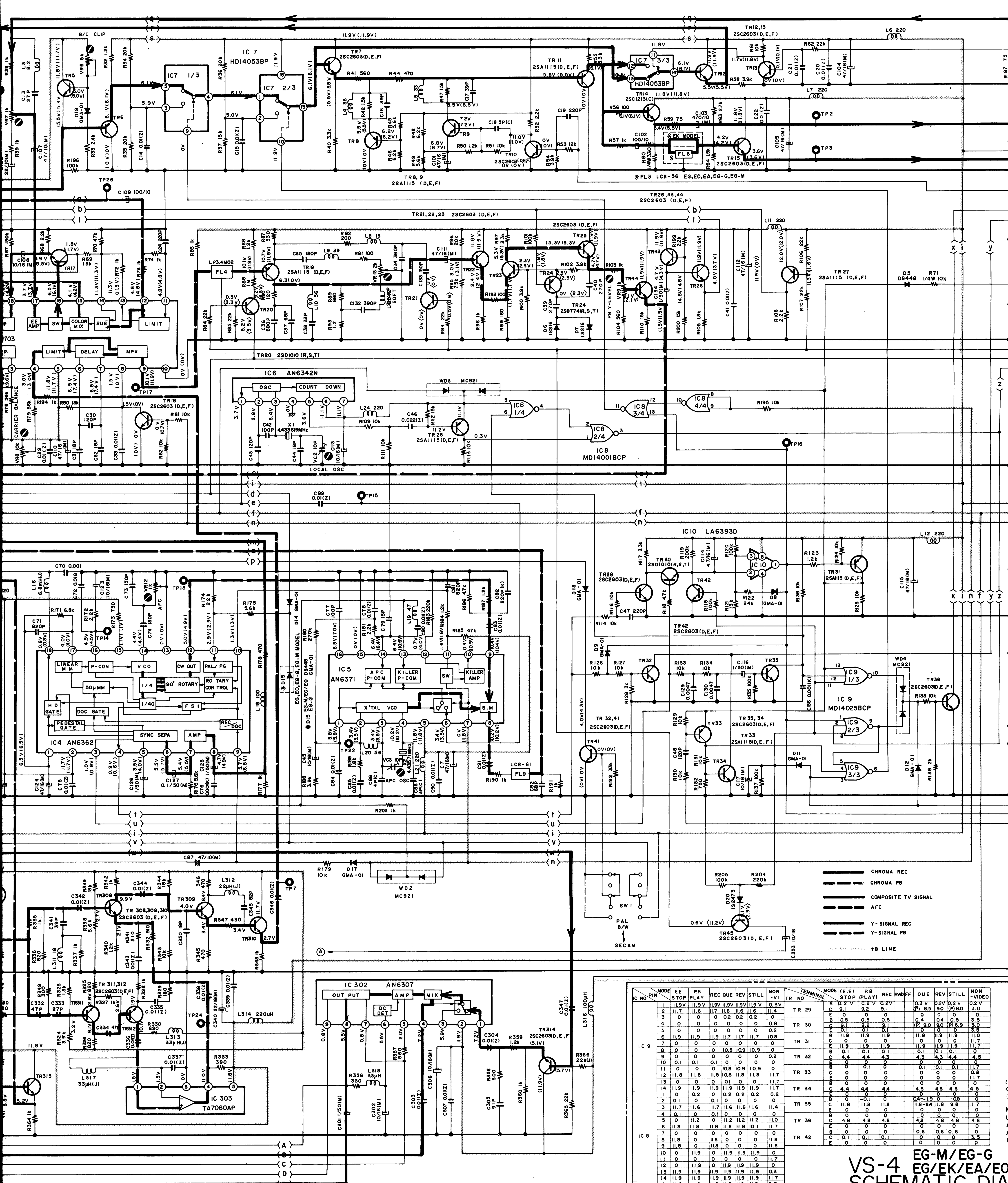
VS-4


IC1 AN6310
SYNC SEP.
CLAMP
AGC DET
A. G. C
WHITE DARK CLIP
FM MOD
PRE EMPHASIS
CLAMP
VIDEO AMP
COLOR AMP
B/W COLOR SW
VIDEO AMP
AGC GAIN
TP21
TP6
LCB-53
FL1
REC Y-CURRENT
WHT-CLIP
DARK-CLIP
CARRIER SET
DEVIATION
TR1,2 2SC2603(D,E,F)
TR3,4 2SC2603 (D,E,F)
LP3.4M01
FL2
B/C CLIP
EE LEVEL
TR5 2SC2603 (D,E,F)
TR6 2SA1115 (D,E,F)
IC 7 HD14053BP
IC7 1/3
IC7 2/3
TP4
TP26
TR16,17 2SC2603 (D,E,F)
IC2 HA11703
VIDEO AMP
EE AMP
SW
COLOR MIX
SUB
LIMIT
SYNC SEP.
LIMIT
DELAY
MPX
CARRIER BALANCE
TP17
TR18 2SC2603 (D,E,F)
LP3.4M02
FL4
TR19 2SA1115 (D,E,F)
TR20 2SD1010 (R,S,T)
IC6 AN6342N
OSC
COUNT
X1 4.433619MHz
SKEW JUMP PCB P47
GND
VIDEO IN
SP/LP
VIDEO OUT
C-OUT
4.43 MHz
PB12
WA2
SKEW JUMP PCB P48
GND
AL12
SYNC
C-OUT
C-IN
WA1
TR 37 2SC2603 (D,E,F)
LCB-58
FL8
FL7
LJ20BP4.43M05
TP8
TP9
TP10
TP11
TP12
TP13
TP25
IC3 AN6360
ACC
CHROMA DET
B.M
6DB UP/DOWN
PB AMP
ACC DET
REC BURST GATE
PB BURST GATE
PB OUT AMP
REC OUT AMP
LCB-57
FL6
REC CHROMA CURRENT
PB CHROMA LEVEL
TR39 2SC2603(D,E,F)
EFD-JR124A 13D
DL1
TR38
TR40
WD1 MC921
EG,EO,EG-G,EG-M MODEL
TR38,40 2SC2603(D,E,F)
IC4 AN6362
LINEAR MM
P-CON
VCO
CW OUT
PAL/PG
50μMM
1/4
90° ROTARY
ROTARY CON TROL
1/40
FSI
H D GATE
DOC GATE
PEDESTAL GATE
SYNC SEPA
AMP
REC DOC
TP14
TP18
AFC
EG,EO,EG-G,EG-M MODEL
TC1
GND
SWEEP IN
ENVE
SWP
TR313
IC 304
IC304 TA78L005AP
TR 313,301,302,303 2SC2603(D,E,F)
R162,163 EG-M, EG,EO 1/4W 10k EG-G 1/6W 10k
TR 305,306,307 2SC2603(D,E,F)
IC 301 AN6326
PG AMP
DOC AMP
OUTPUT AMP
DOC SW
DOC DET
1ST & 2ND AMP
HEAD SW
AGC AMP
1/2 VCC + VD
AGC DET
CHROMA AMP
TR301
TR302
TR303
TR304
TR305
TR306
TR307
TR 304,315 2SC2603(D,E,F)
EFD-EN645A11E
DL301
LCB-59
FL5
TR315
PEAKING
TP19
TP20
TP23
H901 VH-150A/B
CH1
CH2
VIDEO HEAD
P21
CH-1 FO
CH-2 FO
TR308
TR309
TR310
TR311
TR312
TR 308,309,310 2SC2603(D,E,F)
TR 311,312 2SC2603(D,E,F)
TP7
TP24
IC 303 TA7060AP

001373

VIDEO PCB V1017A5040

A B C D E F

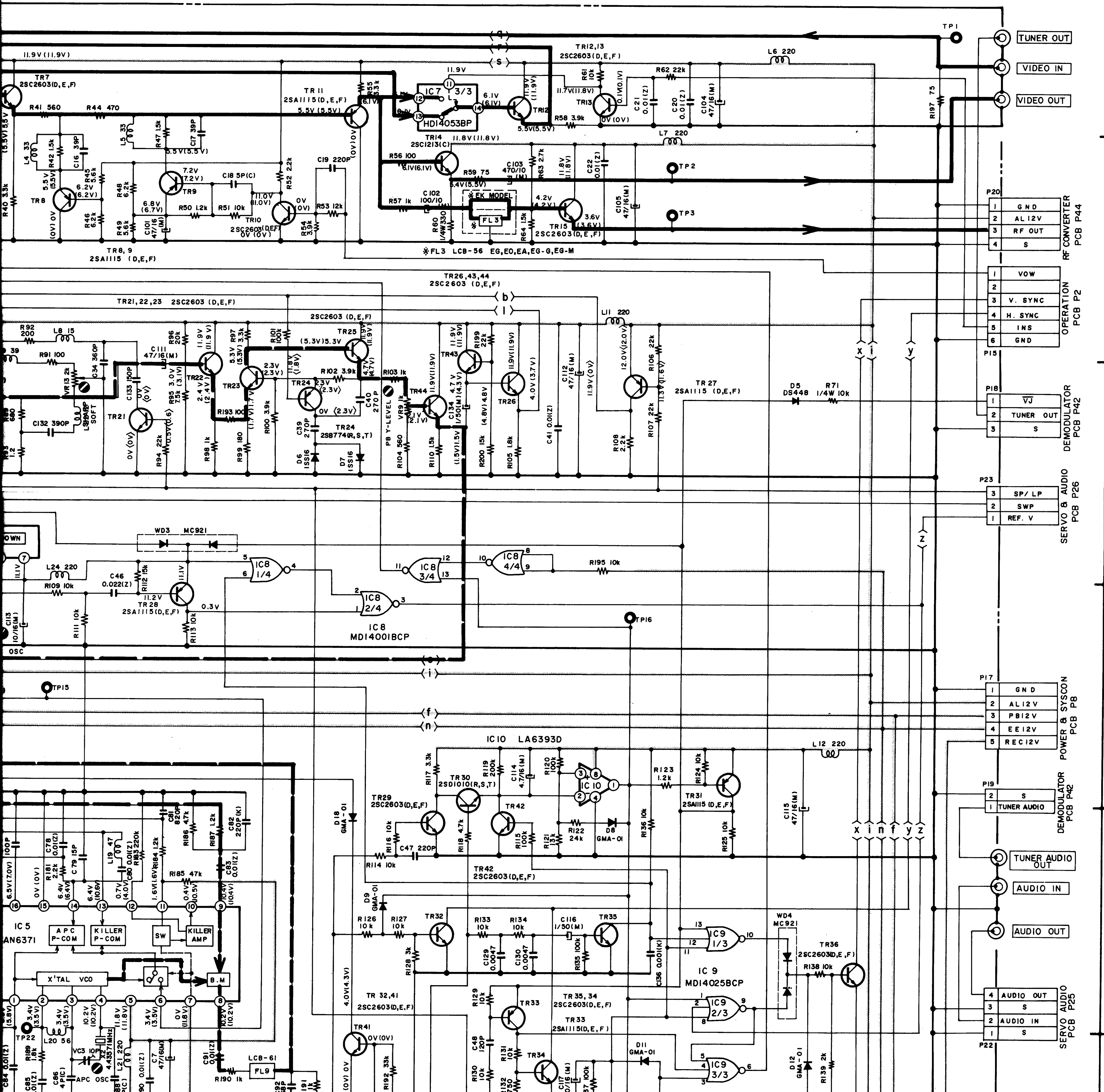

IC 7
HD14053BP
IC7 1/3
IC7 2/3
IC7 3/3
B/C CLIP
TR5
TR6
TR7 2SC2603(D,E,F)
TR8, 9 2SA1115 (D,E,F)
TR10 2SC2603(D,E,F)
TR11 2SA1115(D,E,F)
TR12,13 2SC2603(D,E,F)
TR14 2SC1213(C)
TR15 2SC2603(D,E,F)
※EK MODEL
FL3
※FL3 LCB-56 EG,EO,EA,EG-G,EG-M
TP2
TP3
TP26
TR26,43,44 2SC2603 (D,E,F)
TR21,22,23 2SC2603 (D,E,F)
TR17
TR18 2SC2603 (D,E,F)
TR19 2SA1115 (D,E,F)
TR20 2SD1010 (R,S,T)
TR24 2SB774(R,S,T)
TR25
TR27 2SA1115 (D,E,F)
LP3.4M02
FL4
EE AMP
SW
COLOR MIX
SUB
LIMIT
DELAY
MPX
CARRIER BALANCE
TP17
PB Y-LEVEL
IC6 AN6342N
OSC
COUNT DOWN
X1 4.433619MHz
LOCAL OSC
WD3 MC921
IC8 1/4
IC8 2/4
IC8 3/4
IC8 4/4
IC8 MD14001BCP
TR28 2SA1115(D,E,F)
TP15
TP16
IC10 LA6393D
TR29 2SC2603(D,E,F)
TR30 2SD1010(R,S,T)
TR31 2SA1115 (D,E,F)
TR42 2SC2603(D,E,F)
TR 32,41 2SC2603(D,E,F)
TR 35,34 2SC2603(D,E,F)
TR33 2SA1115(D,E,F)
IC9 1/3
IC9 2/3
IC9 3/3
IC 9 MD14025BCP
WD4 MC921
TR36 2SC2603(D,E,F)
TR41
D18 GMA-01
D20 1S2473
TR45 2SC2603(D,E,F)
SW1
PAL
B/W
SECAM
TP18
TP14
AFC
LINEAR MM
P-CON
VCO
CW OUT
PAL/PG
1/4
90° ROTARY
RO TARY CON TROL
50μMM
1/40
FSI
H D GATE
DOC GATE
PEDESTAL GATE
SYNC SEPA
AMP
REC DOC
IC4 AN6362
IC5 AN6371
APC P-COM
KILLER P-COM
SW
KILLER AMP
X'TAL VCO
B.M
APC OSC
LCB-61
FL9
TP22
D14 GMA-01 EG-M MODEL
D15 EG-M/EG/EO DS446 GMA-01
WD2 MC921
D17 GMA-01
TR 308,309,310 2SC2603 (D,E,F)
TR308
TR309
TR310
TP7
TR 311,312 2SC2603(D,E,F)
TR311
TR312
TP24
IC 303 TA7060AP
TR315
IC 302 AN6307
OUT PUT
AMP
MIX
DC DET
TR314 2SC2603(D,E,F)
A
CHROMA REC
CHROMA PB
COMPOSITE TV SIGNAL
AFC
Y-SIGNAL REC
Y-SIGNAL PB
+B LINE
E
F
G
H
I
J

IC NO	PIN	E.E STOP	P.B PLAY	REC	QUE	REV	STILL	NON -VI
IC 9	1	11.9V	11.9 V	11.9V	11.9V	11.9V	11.9 V	0.3V
	2	11.7	11.6	11.7	11.6	11.6	11.6	11.4
	3	0	0	0	0.2	0.2	0.2	0
	4	0	0	0	0	0	0	0.8
	5	0	0	0	0	0	0	0.2
	6	11.9	11.9	11.9	11.7	11.7	11.7	10.8
	7	0	0	0	0	0	0	0
	8	0	0	0	10.8	10.9	10.9	0
	9	0	0	0	0	0	0	0.2
	10	0.1	0.1	0.1	0	0	0	0
	11	0	0	0	10.8	10.9	10.9	0
	12	11.8	11.8	11.8	10.8	11.8	11.8	11.7
	13	0	0	0	0.1	0	0	11.7
	14	11.9	11.9	11.9	11.9	11.9	11.9	11.7
IC 8	1	0	0.2	0	0.2	0.2	0.2	0.2
	2	0.1	0	0.1	0	0	0	0
	3	11.7	11.6	11.7	11.6	11.6	11.6	11.4
	4	0.1	0	0.1	0	0	0	0
	5	0	11.2	0	11.2	11.2	11.2	11.0
	6	11.8	11.8	11.8	11.8	11.8	10.1	11.7
	7	0	0	0	0	0	0	0
	8	11.8	0	11.8	0	0	0	11.8
	9	11.8	0	11.8	0	0	0	11.8
	10	0	11.9	0	11.9	11.9	11.9	0
	11	0	0	0	0	0	0	11.7
	12	0	11.9	0	11.9	11.9	11.9	0
	13	11.9	11.9	11.9	11.9	11.9	11.9	0.3
	14	11.9	11.9	11.9	11.9	11.9	11.9	11.7
IC 10	1	11.9	11.9	11.9	11.8	11.9	11.9	0.3
	2	0.1	0.1	0.1	0	0	0	3.5
	3	1.3	1.3	1.3	1.4	1.4	1.3	1.1
	4	0	0	0	0	0	0	0
	8	11.9	11.9	11.9	11.9	11.9	11.9	11.7

TR NO	TERMINAL	(E.E) STOP	P.B (PLAY)	REC	RWD	FF	QUE	REV	STILL	NON -VIDEO
TR 29	B	0.2 V	0.2 V	0.2V			0.3 V	0.2V	0.2 V	0.2 V
	C	9.1	9.2	9.1			Ⓟ 8.5	9.0	Ⓟ 8.0	3.0
	E	0	0	0			0	0	0	0
TR 30	B	0.5	0.5	0.5			0.4	0.4	0.5	3.5
	C	9.1	9.2	9.1			Ⓟ 9.0	9.0	Ⓟ 6.9	3.0
	E	0.1	0.1	0.1			0	0	0	3.5
TR 31	B	11.9	11.9	11.9			11.9	11.9	11.9	11.0
	C	0	0	0			0	0	0	11.7
	E	11.9	11.9	11.9			11.9	11.9	11.9	11.7
TR 32	B	0.1	0.1	0.1			0.1	0.1	0.1	0
	C	4.4	4.4	4.3			4.3	4.3	4.4	4.5
	E	0	0	0			0	0	0	0
TR 33	B	0	0.1	0			0.1	0.1	0.1	11.7
	C	0	0	0			0	0	0	0.8
	E	0	0	0			0	0	0	11.7
TR 34	B	0	0	0			0	0	0	0
	C	4.4	4.4	4.4			4.3	4.3	4.3	4.5
	E	0	0	0			0	0	0	0
TR 35	B	0	−0.1	0			0.4~1.9	0	-0.8	0
	C	11.8	11.8	11.8			11.8~8.4	11.8	9.8	11.7
	E	0	0	0			0	0	0	0
TR 36	B	0	0	0			0	0	0	0
	C	4.8	4.8	4.8			4.8	4.8	4.8	4.8
	E	0	0	0			0	0	0	0
TR 42	B	0	0	0			0.6	0.6	0.6	0
	C	0.1	0.1	0.1			0	0	0	3.5
	E	0	0	0			0	0	0	0

VS-4 EG-M/EG-G EG/EK/EA/EO SCHEMATIC DIA

NO.18-7 83


TUNER OUT
VIDEO IN
VIDEO OUT
TP1
TP2
TP3
TP15
TP16
TP22
IC7 3/3 HD14053BP
IC8 MD14001BCP
IC9 MD14025BCP
IC10 LA6393D
IC5 AN6371
IC302 AN6307
APC P-COM
KILLER P-COM
KILLER AMP
SW
X'TAL VCO
B.M
AMP
MIX
DC DET
LCB-61 FL9
✻EK MODEL FL3
✻FL3 LCB-56 EG,EO,EA,EG-G,EG-M
P20: 1 GND, 2 AL12V, 3 RF OUT, 4 S — RF CONVERTER PCB P44
P15: 1 VOW, 2, 3 V. SYNC, 4 H. SYNC, 5 INS, 6 GND — OPERATION PCB P2
P18: 1 VJ, 2 TUNER OUT, 3 S — DEMODULATOR PCB P42
P23: 3 SP/LP, 2 SWP, 1 REF. V — SERVO & AUDIO PCB P26
P17: 1 GND, 2 AL12V, 3 PB12V, 4 EE12V, 5 REC12V — POWER & SYSCON PCB P8
P19: 2 S, 1 TUNER AUDIO — DEMODULATOR PCB P42
TUNER AUDIO OUT
AUDIO IN
AUDIO OUT
P22: 4 AUDIO OUT, 3 S, 2 AUDIO IN, 1 S — SERVO AUDIO PCB P25
P16: 1 VP, 2 VJ, 3 HP — POWER & SYSCON PCB P7
SW1
PAL
B/W
SECAM
WD2 MC921
WD3 MC921
WD4 MC921
VR9 P8 Y-LEVEL
VR13 SOFT
CHROMA REC
CHROMA PB
COMPOSITE TV SIGNAL
AFC
Y-SIGNAL REC
Y-SIGNAL PB
+B LINE
E C B
2SB774
2SD1010
E C B
2SC2603
2SA1115
B C E
2SC1312
1
2
3
4
5
6
7
8
G
H
I
J
K

IC NO	PIN	EE STOP	PB PLAY	REC	QUE	REV	STILL	NON -VI
IC 9	1	11.9V	11.9 V	11.9V	11.9V	11.9V	11.9 V	0.3V
	2	11.7	11.6	11.7	11.6	11.6	11.6	11.4
	3	0	0	0	0.2	0.2	0.2	0
	4	0	0	0	0	0	0	0.8
	5	0	0	0	0	0	0	0.2
	6	11.9	11.9	11.9	11.7	11.7	11.7	10.8
	7	0	0	0	0	0	0	0
	8	0	0	0	10.8	10.9	10.9	0
	9	0	0	0	0	0	0	0.2
	10	0.1	0.1	0.1	0	0	0	0
	11	0	0	0	10.8	10.9	10.9	0
	12	11.8	11.8	11.8	10.8	11.8	11.8	11.7
	13	0	0	0	0.1	0	0	11.7
	14	11.9	11.9	11.9	11.9	11.9	11.9	11.7
IC 8	1	0	0.2	0	0.2	0.2	0.2	0.2
	2	0.1	0	0.1	0	0	0	0
	3	11.7	11.6	11.7	11.6	11.6	11.6	11.4
	4	0.1	0	0.1	0	0	0	0
	5	0	11.2	0	11.2	11.2	11.2	11.0
	6	11.8	11.8	11.8	11.8	11.8	10.1	11.7
	7	0	0	0	0	0	0	0
	8	11.8	0	11.8	0	0	0	11.8
	9	11.8	0	11.8	0	0	0	11.8
	10	0	11.9	0	11.9	11.9	11.9	0
	11	0	0	0	0	0	0	11.7
	12	0	11.9	0	11.9	11.9	11.9	0
	13	11.9	11.9	11.9	11.9	11.9	11.9	0.3
	14	11.9	11.9	11.9	11.9	11.9	11.9	11.7
IC 10	1	11.9	11.9	11.9	11.8	11.9	11.9	0.3
	2	0.1	0.1	0.1	0	0	0	3.5
	3	1.3	1.3	1.3	1.4	1.4	1.3	1.1
	4	0	0	0	0	0	0	0
	8	11.9	11.9	11.9	11.9	11.9	11.9	11.7

TR NO	TERMINAL	(E.E) STOP	P.B (PLAY)	REC	RWD	FF	QUE	REV	STILL	NON -VIDEO
TR 29	B	0.2 V	0.2 V	0.2V			0.3 V	0.2V	0.2 V	0.2 V
	C	9.1	9.2	9.1			Ⓟ 8.5	9.0	Ⓟ 8.0	3.0
	E	0	0	0			0	0	0	0
TR 30	B	0.5	0.5	0.5			0.4	0.4	0.5	3.5
	C	9.1	9.2	9.1			Ⓟ 9.0	9.0	Ⓟ 6.9	3.0
	E	0.1	0.1	0.1			0	0	0	3.5
TR 31	B	11.9	11.9	11.9			11.9	11.9	11.9	11.0
	C	0	0	0			0	0	0	11.7
	E	11.9	11.9	11.9			11.9	11.9	11.9	11.7
TR 32	B	0.1	0.1	0.1			0.1	0.1	0.1	0
	C	4.4	4.4	4.3			4.3	4.3	4.4	4.5
	E	0	0	0			0	0	0	0
TR 33	B	0	0.1	0			0.1	0.1	0.1	11.7
	C	0	0	0			0	0	0	0.8
	E	0	0	0			0	0	0	11.7
TR 34	B	0	0	0			0	0	0	0
	C	4.4	4.4	4.4			4.3	4.3	4.3	4.5
	E	0	0	0			0	0	0	0
TR 35	B	0	-0.1	0			0.4~1.9	0	-0.8	0
	C	11.8	11.8	11.8			11.8~8.4	11.8	9.8	11.7
	E	0	0	0			0	0	0	0
TR 36	B	0	0	0			0	0	0	0
	C	4.8	4.8	4.8			4.8	4.8	4.8	4.8
	E	0	0	0			0	0	0	0
TR 42	B	0	0	0			0.6	0.6	0.6	0
	C	0.1	0.1	0.1			0	0	0	3.5
	E	0	0	0			0	0	0	0

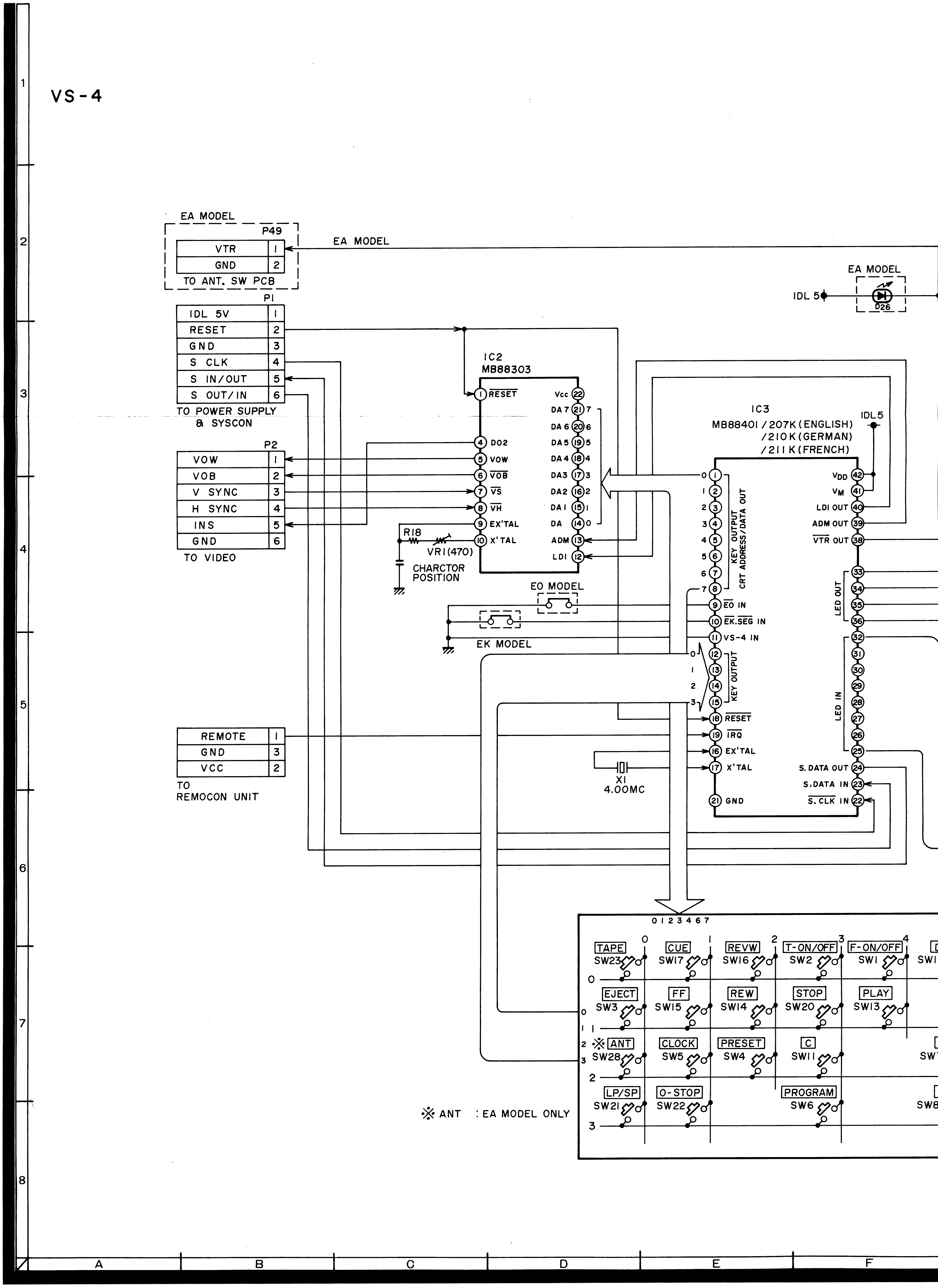
( ) : REC MODE
< > : LP MODE
Ⓟ : PULSE

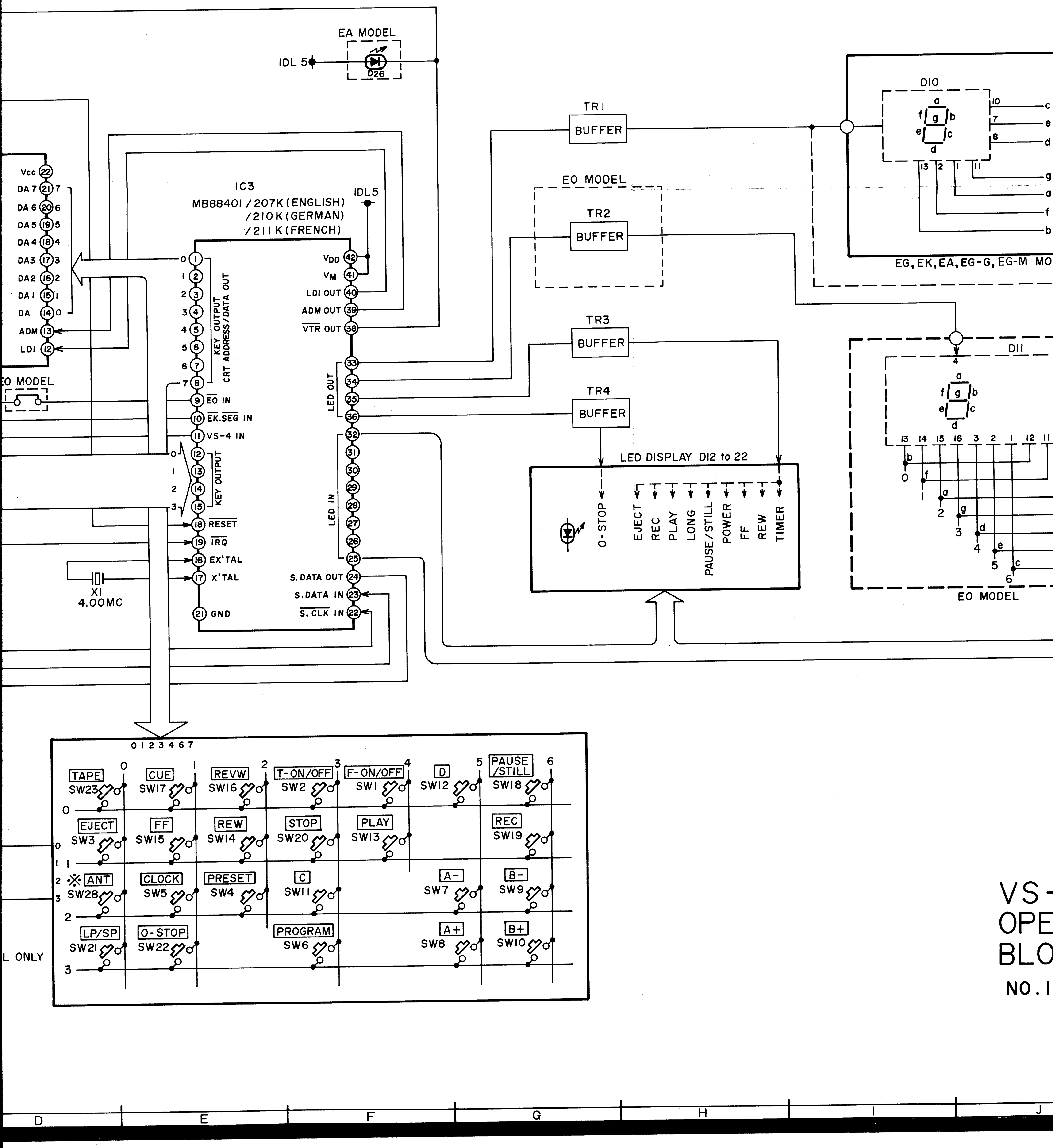
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
INDUCTORS IN μH(K)

VS-4 EG-M/EG-G EG/EK/EA/EO VIDEO SCHEMATIC DIAGRAM

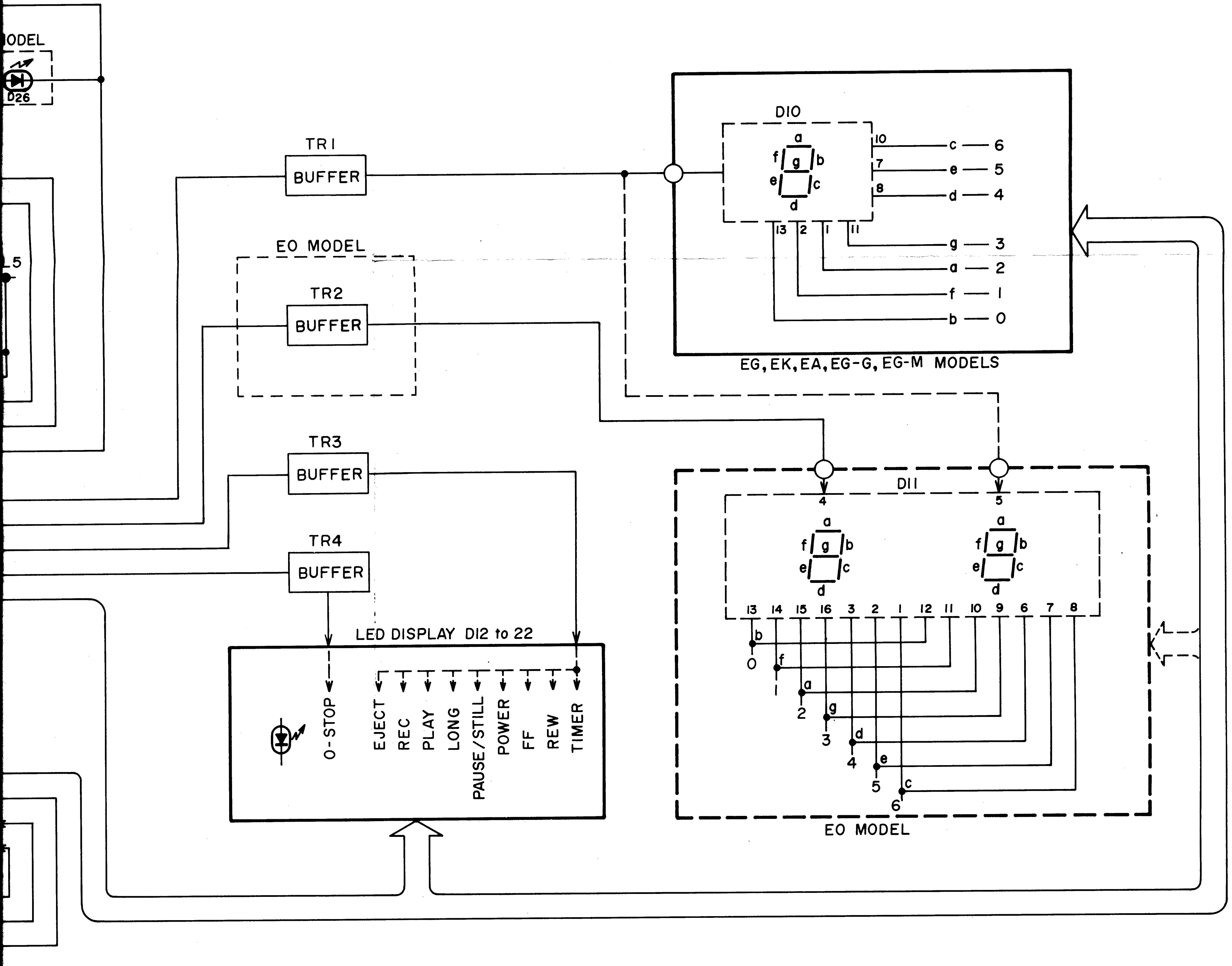
NO.18-7 830527A
5C

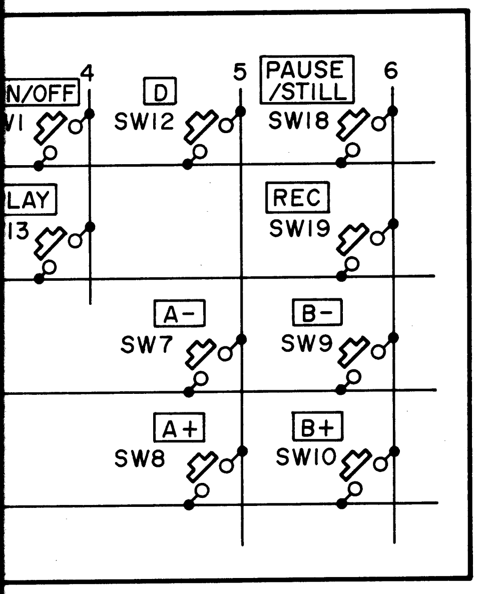
VS-4


EA MODEL
P49
VTR 1
GND 2
TO ANT. SW PCB
EA MODEL
EA MODEL
IDL 5
D26
P1
IDL 5V 1
RESET 2
GND 3
S CLK 4
S IN/OUT 5
S OUT/IN 6
TO POWER SUPPLY & SYSCON
P2
VOW 1
VOB 2
V SYNC 3
H SYNC 4
INS 5
GND 6
TO VIDEO
IC2
MB88303
RESET
DO2
VOW
VOB
VS
VH
EX'TAL
X'TAL
Vcc
DA 7
DA 6
DA 5
DA 4
DA 3
DA 2
DA 1
DA
ADM
LDI
R18
VR1(470)
CHARCTOR POSITION
EO MODEL
EK MODEL
IC3
MB88401 / 207K (ENGLISH)
/ 210K (GERMAN)
/ 211K (FRENCH)
IDL5
KEY OUTPUT
CRT ADDRESS/DATA OUT
EO IN
EK.SEG IN
VS-4 IN
KEY OUTPUT
RESET
IRQ
EX'TAL
X'TAL
GND
VDD
VM
LDI OUT
ADM OUT
VTR OUT
LED OUT
LED IN
S. DATA OUT
S.DATA IN
S.CLK IN
X1
4.00MC
REMOTE 1
GND 3
VCC 2
TO REMOCON UNIT
0 1 2 3 4 6 7
TAPE SW23
CUE SW17
REVW SW16
T-ON/OFF SW2
F-ON/OFF SW1
EJECT SW3
FF SW15
REW SW14
STOP SW20
PLAY SW13
※ ANT SW28
CLOCK SW5
PRESET SW4
C SW11
LP/SP SW21
O-STOP SW22
PROGRAM SW6
※ ANT : EA MODEL ONLY
A
B
C
D
E
F
1
2
3
4
5
6
7
8


EA MODEL
IDL 5
D26
Vcc 22
DA7 21 7
DA6 20 6
DA5 19 5
DA4 18 4
DA3 17 3
DA2 16 2
DA1 15 1
DA 14 0
ADM 13
LDI 12
O MODEL
IC3
MB88401/207K(ENGLISH)
/210K(GERMAN)
/211K(FRENCH)
IDL5
KEY OUTPUT
CRT ADDRESS/DATA OUT
EO IN
EK.SEG IN
VS-4 IN
KEY OUTPUT
RESET
IRQ
EX'TAL
X'TAL
X1
4.00MC
GND
VDD
VM
LDI OUT
ADM OUT
VTR OUT
LED OUT
LED IN
S. DATA OUT
S. DATA IN
S. CLK IN
TR1
BUFFER
EO MODEL
TR2
BUFFER
TR3
BUFFER
TR4
BUFFER
LED DISPLAY D12 to 22
O-STOP
EJECT
REC
PLAY
LONG
PAUSE/STILL
POWER
FF
REW
TIMER
D10
EG, EK, EA, EG-G, EG-M MO
D11
EO MODEL
0 1 2 3 4 6 7
TAPE SW23
CUE SW17
REVW SW16
T-ON/OFF SW2
F-ON/OFF SW1
D SW12
PAUSE /STILL SW18
EJECT SW3
FF SW15
REW SW14
STOP SW20
PLAY SW13
REC SW19
※ ANT SW28
CLOCK SW5
PRESET SW4
C SW11
A- SW7
B- SW9
LP/SP SW21
O-STOP SW22
PROGRAM SW6
A+ SW8
B+ SW10
L ONLY
D
E
F
G
H
I
J

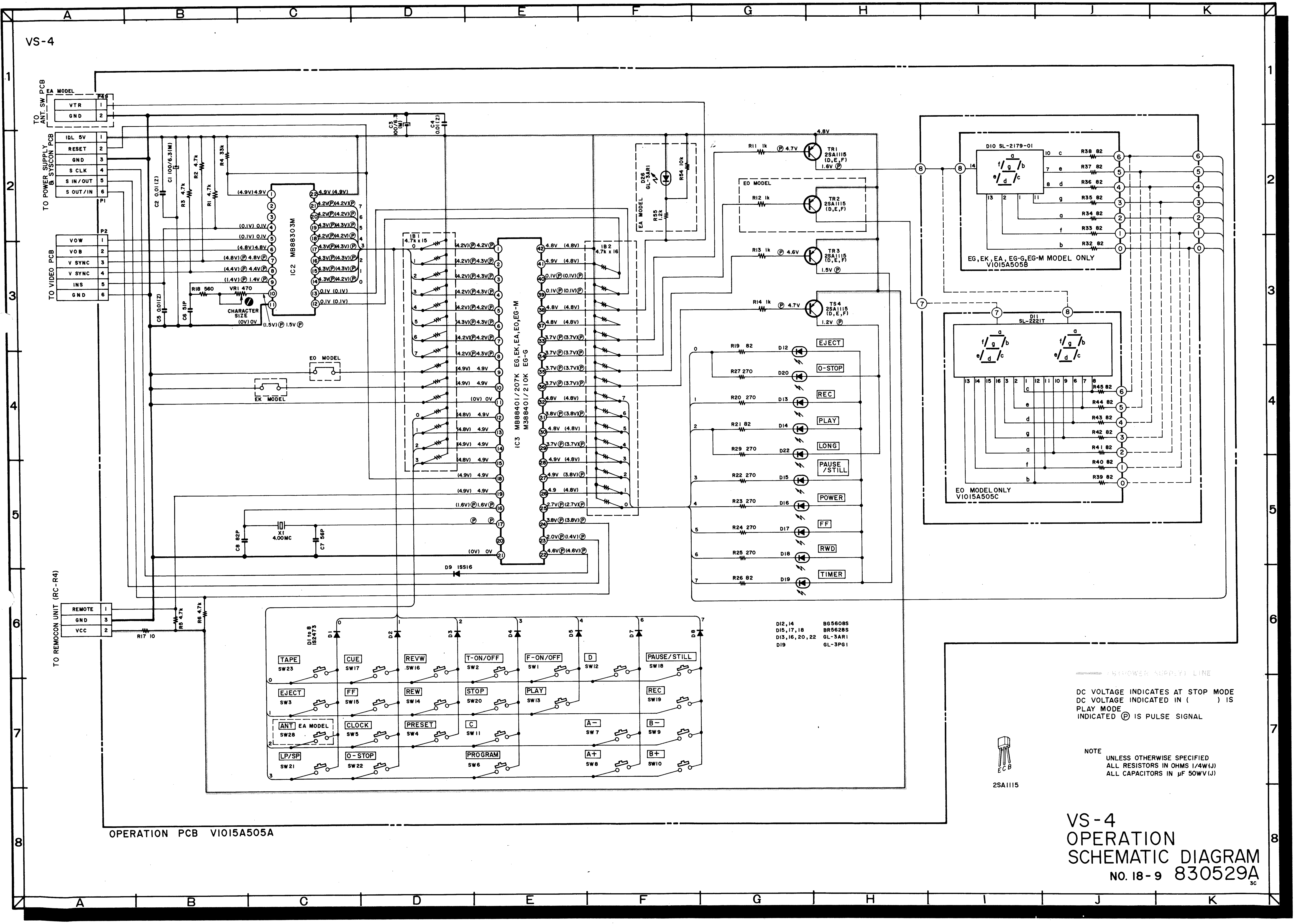
VS-
OPE
BLO
NO.1


ODEL
D26
TR1
BUFFER
EO MODEL
TR2
BUFFER
TR3
BUFFER
TR4
BUFFER
L5
D10
a
f
g
b
e
c
d
10
7
8
13
2
1
11
c — 6
e — 5
d — 4
g — 3
a — 2
f — 1
b — 0
EG, EK, EA, EG-G, EG-M MODELS
D11
4
5
13 14 15 16 3 2 1 12 11 10 9 6 7 8
b
f
a
g
d
e
c
0
1
2
3
4
5
6
EO MODEL
LED DISPLAY D12 to 22
O-STOP
EJECT
REC
PLAY
LONG
PAUSE/STILL
POWER
FF
REW
TIMER


N/OFF
W1
4
D
SW12
5
PAUSE /STILL
SW18
6
LAY
13
REC
SW19
A-
SW7
B-
SW9
A+
SW8
B+
SW10

VS-4 OPERATION BLOCK DIAGRAM

NO. 18-8 830528A


VS-4
TO ANT. SW PCB
EA MODEL
P49
VTR
GND
TO POWER SUPPLY & SYSCON PCB
IDL 5V
RESET
GND
S CLK
S IN/OUT
S OUT/IN
P1
TO VIDEO PCB
P2
VOW
VOB
V SYNC
V SYNC
INS
GND
IC2 MB88303M
CHARACTER SIZE
VR1 470
R18 560
C1 100/6.3(M)
C2 0.01(Z)
C3 100/6.3(M)
C4 0.01(Z)
C5 0.01(Z)
C6 51P
R1 4.7k
R2 4.7k
R3 4.7k
R4 33k
IB1 4.7k x 15
IB2 4.7k x 16
IC3 MB88401/207K EG,EK,EA,EO,EG-M
M388401/210K EG-G
X1 4.00MC
C8 82P
C7 56P
D9 1SS16
EO MODEL
EK MODEL
EA MODEL
D26 GL-3AR1
R55 1.2k
R54 10k
R11 1k
R12 1k
R13 1k
R14 1k
TR1 2SA1115 (D,E,F)
TR2 2SA1115 (D,E,F)
TR3 2SA1115 (D,E,F)
TS4 2SA1115 (D,E,F)
D10 SL-2179-01
EG,EK,EA,EG-G,EG-M MODEL ONLY V1015A505B
D11 SL-2221T
EO MODEL ONLY V1015A505C
R32 82
R33 82
R34 82
R35 82
R36 82
R37 82
R38 82
R39 82
R40 82
R41 82
R42 82
R43 82
R44 82
R45 82
R19 82
R27 270
R20 270
R21 82
R29 270
R22 270
R23 270
R24 270
R25 270
R26 82
D12
D20
D13
D14
D22
D15
D16
D17
D18
D19
EJECT
O-STOP
REC
PLAY
LONG
PAUSE /STILL
POWER
FF
RWD
TIMER
TO REMOCON UNIT (RC-R4)
REMOTE
GND
VCC
R17 10
R5 4.7k
R6 4.7k
D1 to 8 1S2473
TAPE SW23
CUE SW17
REVW SW16
T-ON/OFF SW2
F-ON/OFF SW1
D SW12
PAUSE/STILL SW18
EJECT SW3
FF SW15
REW SW14
STOP SW20
PLAY SW13
REC SW19
ANT EA MODEL SW28
CLOCK SW5
PRESET SW4
C SW11
A− SW7
B− SW9
LP/SP SW21
O-STOP SW22
PROGRAM SW6
A+ SW8
B+ SW10
E C B
2SA1115
OPERATION PCB V1015A505A
A B C D E F G H I J K
1 2 3 4 5 6 7 8

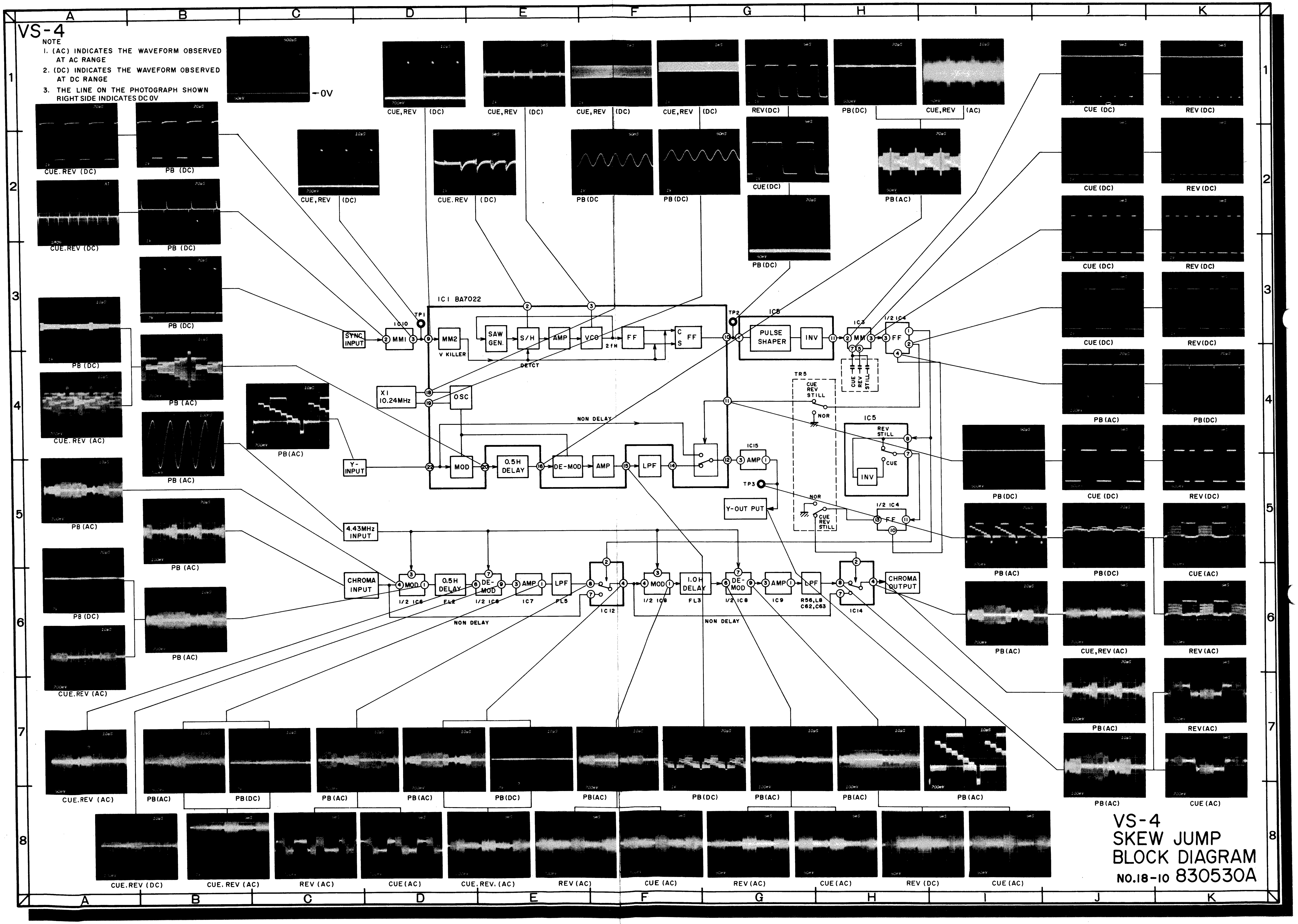
D12,14 BG5608S
D15,17,18 BR5628S
D13,16,20,22 GL-3AR1
D19 GL-3PG1

(B) POWER SUPPLY LINE

DC VOLTAGE INDICATES AT STOP MODE
DC VOLTAGE INDICATED IN ( ) IS
PLAY MODE
INDICATED Ⓟ IS PULSE SIGNAL

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50WV(J)

VS-4
OPERATION
SCHEMATIC DIAGRAM
NO. 18-9 830529A
3C



VS-4

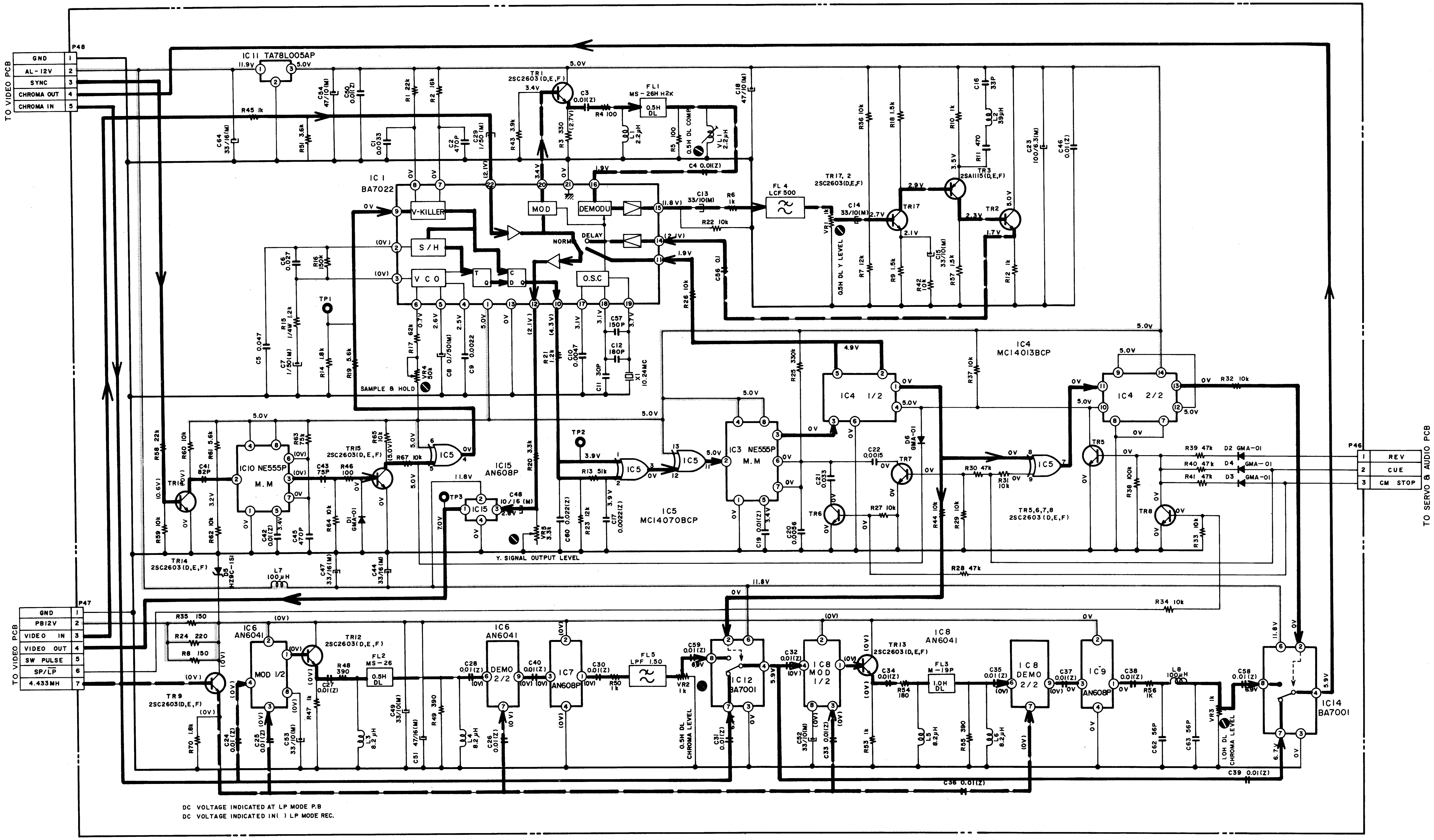
NOTE
1. (AC) INDICATES THE WAVEFORM OBSERVED AT AC RANGE
2. (DC) INDICATES THE WAVEFORM OBSERVED AT DC RANGE
3. THE LINE ON THE PHOTOGRAPH SHOWN RIGHT SIDE INDICATES DC 0V

A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
0V
IC1 BA7022
TP1
TP2
TP3
SYNC INPUT
IC10
MM1
MM2
V KILLER
SAW GEN.
S/H
AMP
VCO
FF
C
S
2fH
DETCT
X1 10.24MHz
OSC
NON DELAY
Y-INPUT
MOD
0.5H DELAY
DE-MOD
AMP
LPF
IC5
PULSE SHAPER
INV
IC3
MM
1/2 IC4
FF
CUE
REV
STILL
TR5
NOR
IC15
AMP
Y-OUT PUT
1/2 IC4
4.43MHz INPUT
CHROMA INPUT
MOD
1/2 IC6
0.5H DELAY
FL2
DE-MOD
1/2 IC6
AMP
IC7
LPF
FL5
IC12
NON DELAY
MOD
1/2 IC8
1.0H DELAY
FL3
DE-MOD
1/2 IC8
AMP
IC9
LPF
R56, L8 C62, C63
IC14
CHROMA OUTPUT
CUE, REV (DC)
CUE. REV (DC)
PB (DC)
PB (AC)
CUE. REV (AC)
REV (DC)
CUE (DC)
CUE, REV (AC)
REV (AC)
CUE (AC)
CUE. REV. (AC)

VS-4
SKEW JUMP
BLOCK DIAGRAM

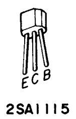
NO.18-10 830530A

VS-4


TO VIDEO PCB
P48
GND
AL-12V
SYNC
CHROMA OUT
CHROMA IN
IC11 TA78L005AP
IC1 BA7022
V-KILLER
S/H
VCO
MOD
DEMODU
DELAY
NORM
O.S.C
SAMPLE & HOLD
TR1 2SC2603(D,E,F)
FL1 MS-26H H2K
FL4 LCF500
TR17, 2 2SC2603(D,E,F)
TR3 2SA1115(D,E,F)
0.5H DL Y LEVEL
IC4 MC14013BCP
IC4 1/2
IC4 2/2
IC3 NE555P M.M
IC5 MC14070BCP
IC10 NE555P M.M
TR15 2SC2603(D,E,F)
IC15 AN608P
Y. SIGNAL OUTPUT LEVEL
TR14 2SC2603(D,E,F)
TR5,6,7,8 2SC2603(D,E,F)
P46
REV
CUE
CM STOP
TO SERVO & AUDIO PCB
TO VIDEO PCB
P47
GND
PB12V
VIDEO IN
VIDEO OUT
SW PULSE
SP/LP
4.433MH
IC6 AN6041
MOD 1/2
DEMO 2/2
TR12 2SC2603(D,E,F)
FL2 MS-26
IC7 AN608P
FL5 LPF 1.50
0.5H DL CHROMA LEVEL
IC12 BA7001
IC8 AN6041
TR13 2SC2603(D,E,F)
FL3 M-19P
IC9 AN608P
1.0H DL CHROMA LEVEL
IC14 BA7001
TR9 2SC2603(D,E,F)
DC VOLTAGE INDICATED AT LP MODE P.B
DC VOLTAGE INDICATED IN( ) LP MODE REC.

CHROMA SIGNAL (SP MODE)
CHROMA SIGNAL (LP MODE)
SKEW JUMP PULSE GENERATOR
4.433MHz
Y. SIGNAL (SP MODE)
Y. SIGNAL (LP MODE)
B (POWER SUPPLY) LINE

49(175)



2SA1115
2SC2603

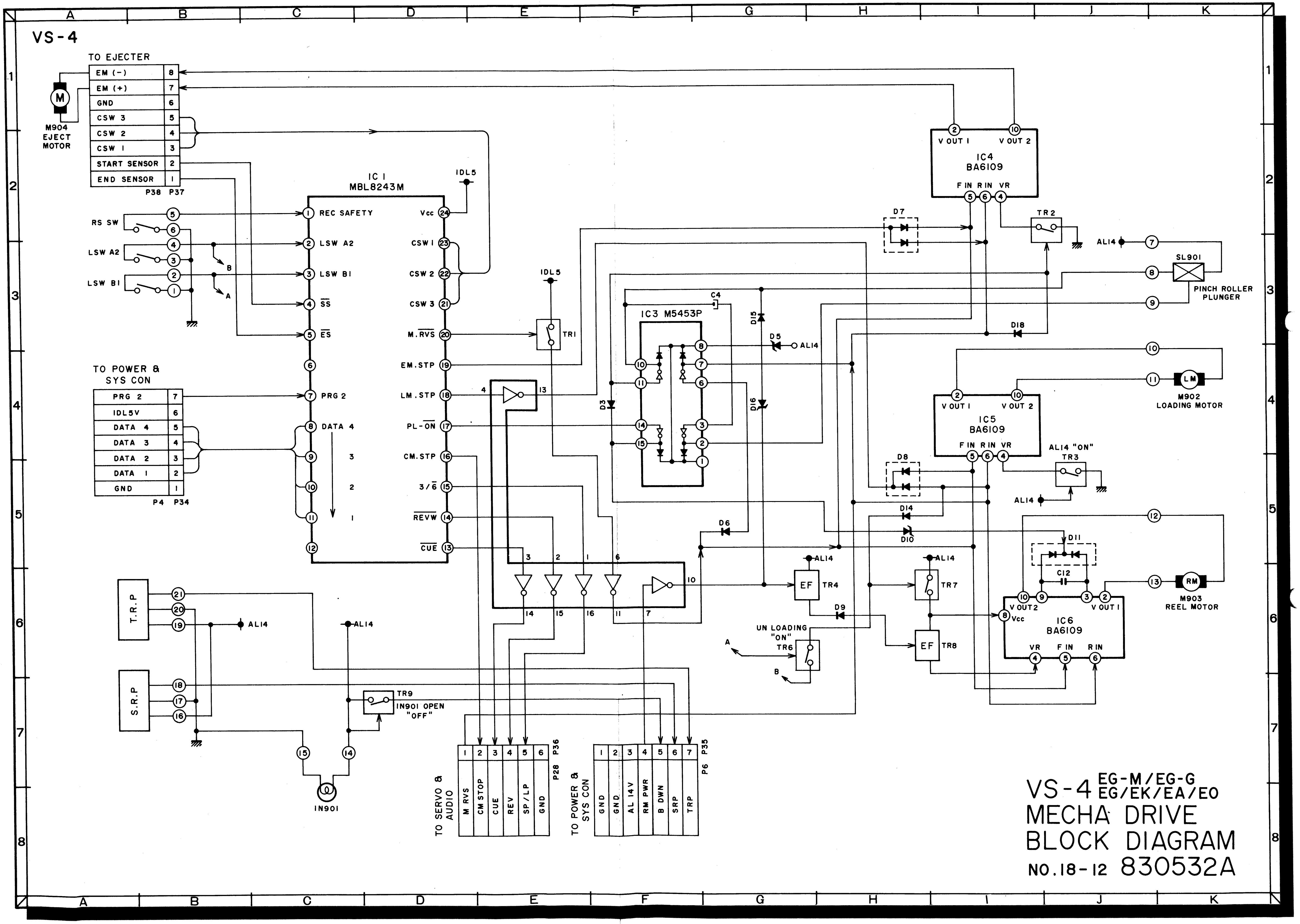
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)

VS-4 SKEW JUMP SCHEMATIC DIAGRAM

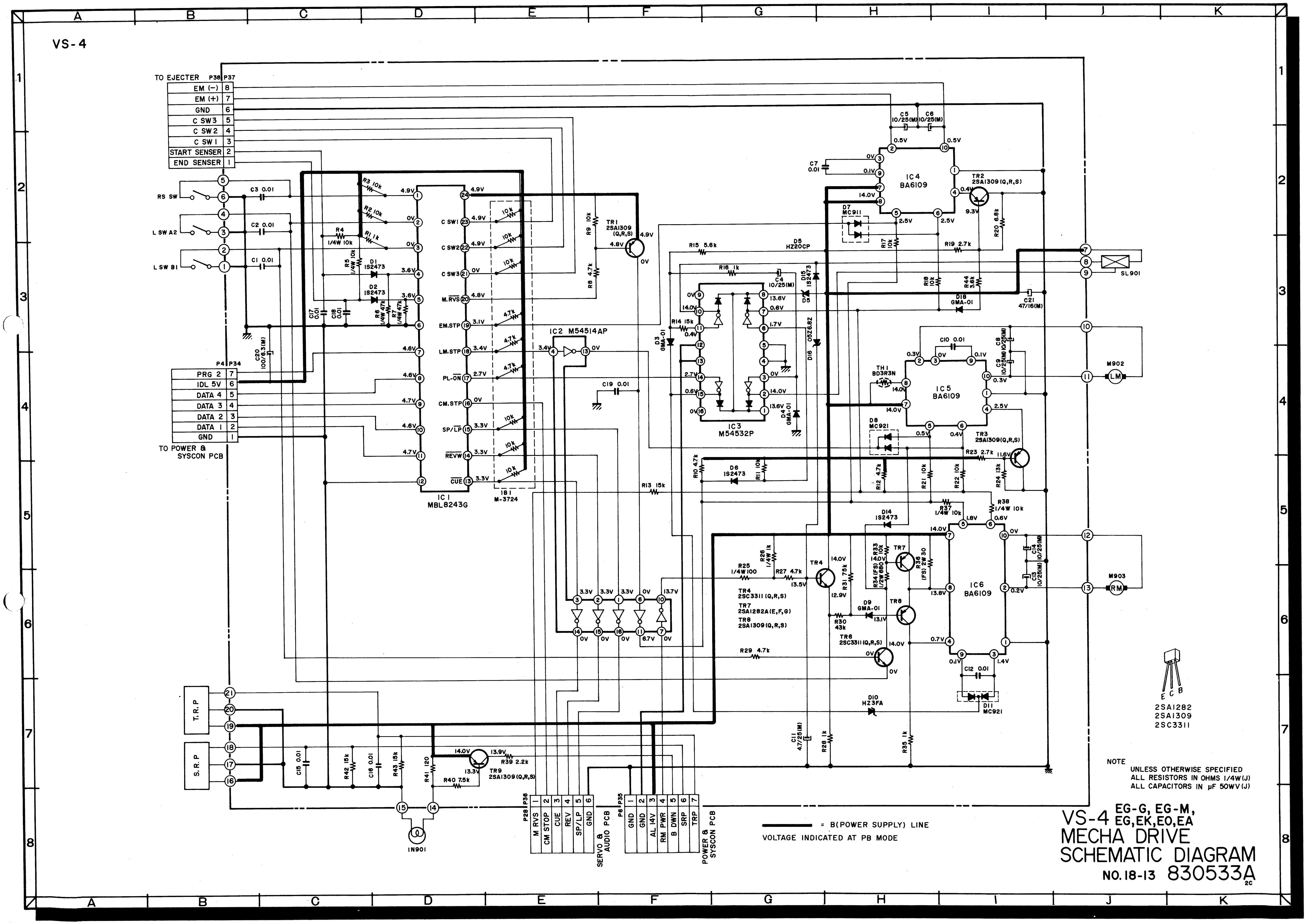
NO.18-11 830531A

5C

001376


VS-4
TO EJECTER
EM (-) 8
EM (+) 7
GND 6
CSW 3 5
CSW 2 4
CSW 1 3
START SENSOR 2
END SENSOR 1
P38 P37
M
M904
EJECT
MOTOR
RS SW
LSW A2
LSW B1
B
A
IC 1
MBL8243M
IDL5
REC SAFETY
LSW A2
LSW B1
SS
ES
PRG 2
DATA 4
3
2
1
Vcc
CSW 1
CSW 2
CSW 3
M.RVS
EM.STP
LM.STP
PL-ON
CM.STP
3/6
REVW
CUE
TO POWER & SYS CON
PRG 2 7
IDL5V 6
DATA 4 5
DATA 3 4
DATA 2 3
DATA 1 2
GND 1
P4 P34
TR1
IC3 M5453P
C4
D3
D5
D6
D7
D8
D9
D10
D11
D14
D15
D16
D18
C12
AL14
IC4
BA6109
V OUT 1
V OUT 2
F IN
R IN
VR
TR2
SL901
PINCH ROLLER
PLUNGER
IC5
BA6109
LM
M902
LOADING MOTOR
AL14 "ON"
TR3
EF
TR4
TR7
TR8
UN LOADING "ON"
TR6
IC6
BA6109
Vcc
RM
M903
REEL MOTOR
T.R.P
S.R.P
TR9
IN901 OPEN "OFF"
IN901
TO SERVO & AUDIO
P28 P36
1 M RVS
2 CM STOP
3 CUE
4 REV
5 SP/LP
6 GND
TO POWER & SYS CON
P6 P35
1 GND
2 GND
3 AL 14V
4 RM PWR
5 B DWN
6 SRP
7 TRP
A B C D E F G H I J K
1 2 3 4 5 6 7 8

VS-4 EG-M/EG-G EG/EK/EA/EO
MECHA DRIVE BLOCK DIAGRAM
NO.18-12 830532A

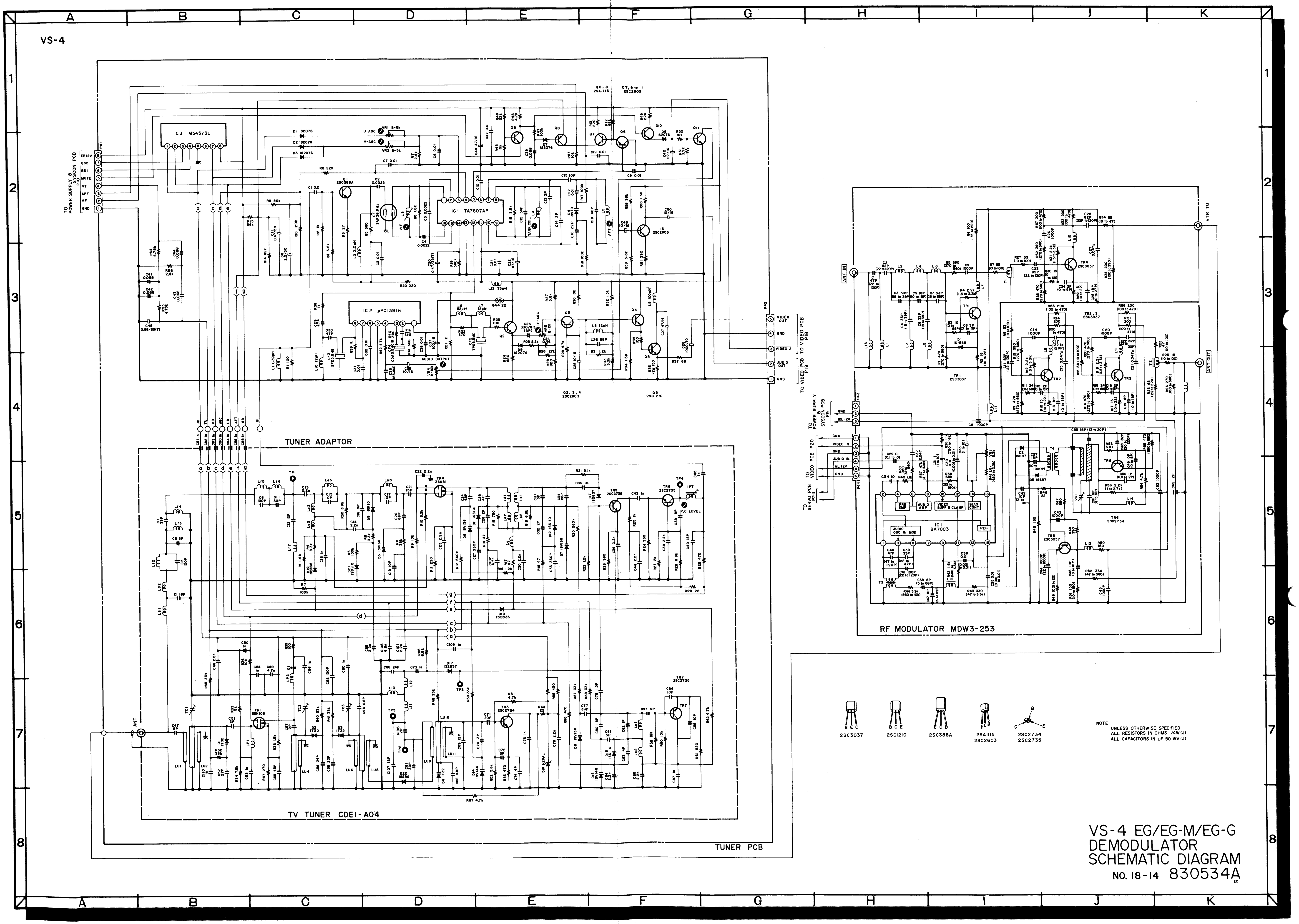

VS-4
TO EJECTER P38 P37
EM (−) 8
EM (+) 7
GND 6
C SW3 5
C SW2 4
C SW1 3
START SENSER 2
END SENSER 1
RS SW
L SW A2
L SW B1
C3 0.01
C2 0.01
C1 0.01
P41 P34
PRG 2 7
IDL 5V 6
DATA 4 5
DATA 3 4
DATA 2 3
DATA 1 2
GND 1
TO POWER & SYSCON PCB
IC1 MBL8243G
C SW1
C SW2
C SW3
M.RVS
EM.STP
LM.STP
PL-ON
CM.STP
SP/LP
REVW
CUE
IB1 M-3724
IC2 M54514AP
TR1 2SA1309 (Q,R,S)
IC3 M54532P
IC4 BA6109
IC5 BA6109
IC6 BA6109
TR2 2SA1309 (Q,R,S)
TR3 2SA1309(Q,R,S)
TR4 2SC3311 (Q,R,S)
TR7 2SA1282A (E,F,G)
TR8 2SA1309 (Q,R,S)
TR6 2SC3311(Q,R,S)
TR9 2SA1309(Q,R,S)
D5 HZ20CP
D7 MC911
D8 MC921
D10 HZ3FA
D11 MC921
TH1 BD3R3N
SL901
M902
M903
T.R.P.
S.R.P.
IN901
P28 P36
M RVS 1
CM STOP 2
CUE 3
REV 4
SP/LP 5
GND 6
SERVO & AUDIO PCB
P6 P35
GND 1
GND 2
AL 14V 3
RM PWR 4
B DWN 5
SRP 6
TRP 7
POWER & SYSCON PCB
E C B
2SA1282
2SA1309
2SC3311
A B C D E F G H I J K
1 2 3 4 5 6 7 8

= B(POWER SUPPLY) LINE

VOLTAGE INDICATED AT PB MODE

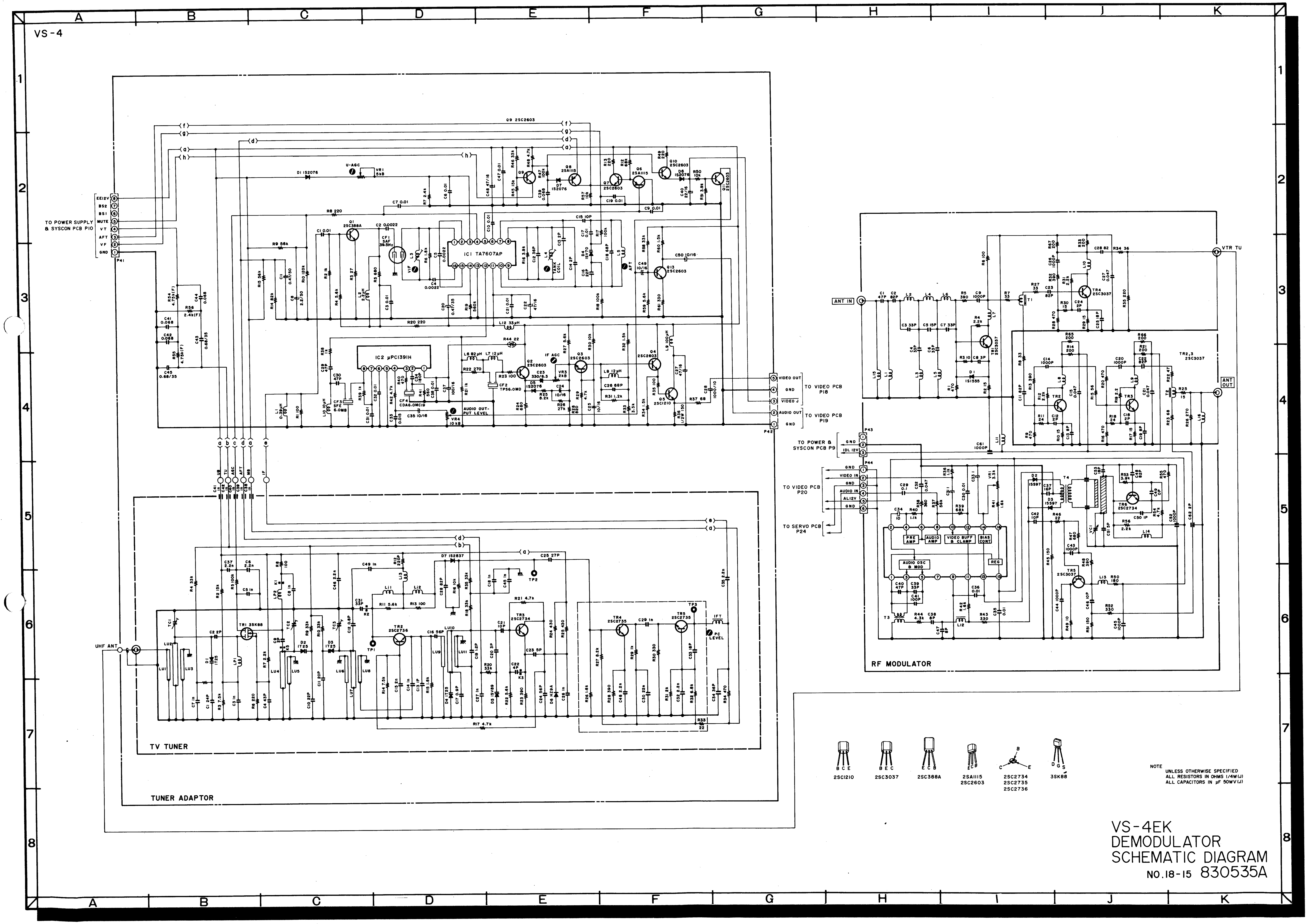
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

VS-4 EG-G, EG-M,
EG,EK,EO,EA
MECHA DRIVE
SCHEMATIC DIAGRAM
NO.18-13 830533A
2C


VS-4
TO POWER SUPPLY & SYSCON PCB P3
P41
EE12V
BS2
BS1
MUTE
VT
AFT
VF
GND
IC3 M54573L
IC1 TA7607AP
IC2 μPC1391H
Q6, 8 2SA1115
Q7, 9 to 11 2SC2603
Q1 2SC388A
Q2, 3, 4 2SC2603
Q5 2SC1210
U-AGC
V-AGC
VR1 B-5k
VR2 B-5k
VIF
TANK COIL
AFT
AUDIO OUTPUT
IF-AGC
P42
VIDEO OUT
GND
VIDEO J
AUDIO OUT
GND
TO VIDEO PCB P18
TO VIDEO PCB P19
TUNER ADAPTOR
TV TUNER CDE1-A04
TUNER PCB
ANT
TP1
TP2
TP3
TP4
TP5
TR1 3SK103
TR3 2SC2734
TR4 3SK81
TR5 2SC2735
TR6 2SC2735
TR7 2SC2735
IFT
P.C LEVEL
ANT IN
VTR TU
ANT OUT
TO POWER SUPPLY & SYSCON PCB P9
P43
GND
IDL 12V
TO VIDEO PCB P20
TO SERVO PCB P24
P44
GND
VIDEO IN
GND
AUDIO IN
AL 12V
GND
IC1 BA7003
PRE EMP
AUDIO AMP
VIDEO BUFF & CLAMP
BIAS CONT
AUDIO OSC & MOD
REG
TR1 2SC3037
TR2, 3 2SC3037
TR4 2SC3037
TR5 2SC3037
TR6 2SC2734
RF MODULATOR MDW3-253
B E C
2SC3037
B C E
2SC1210
E C B
2SC388A
E C B
2SA1115
2SC2603
B
C
E
2SC2734
2SC2735
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

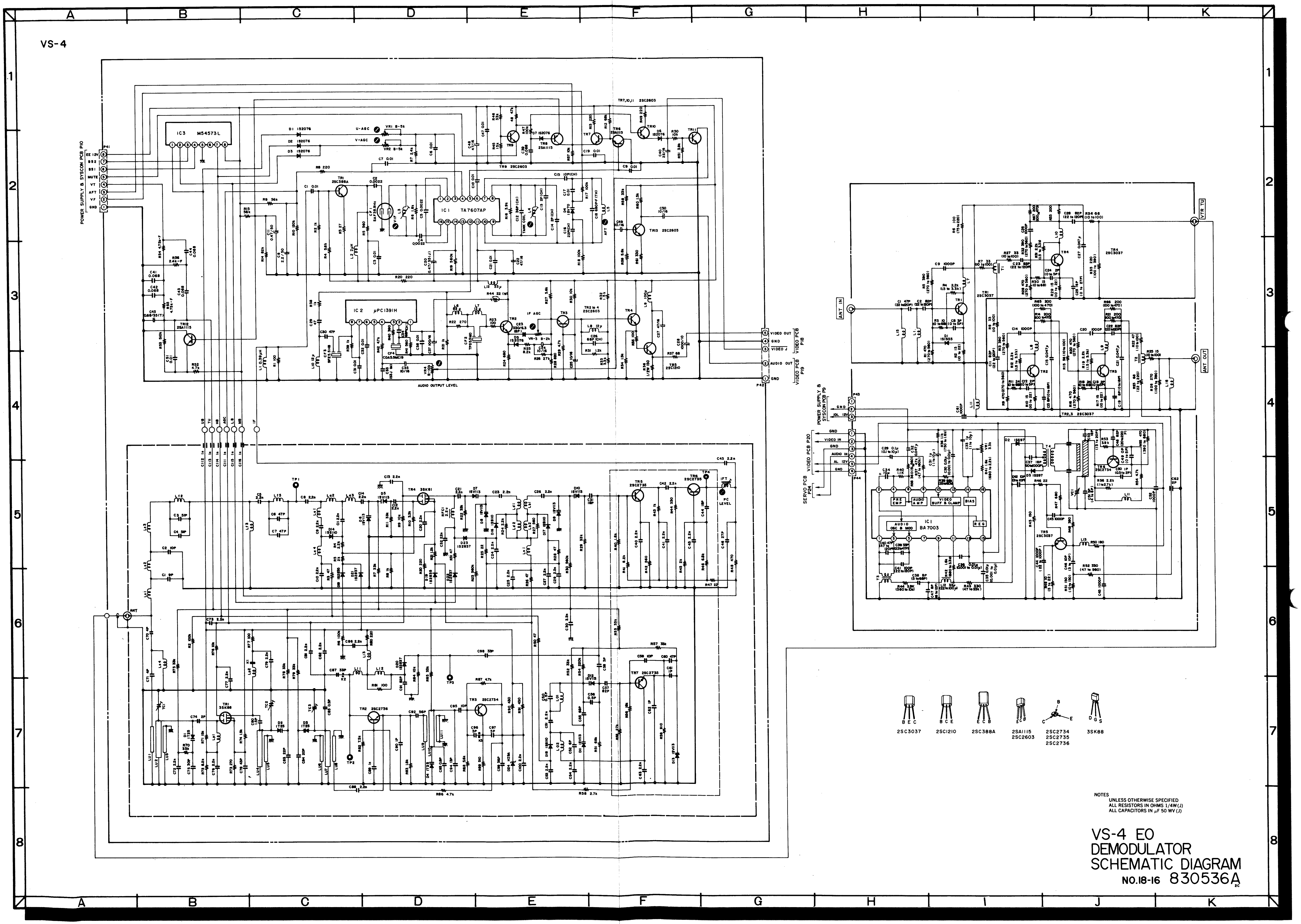
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

VS-4 EG/EG-M/EG-G
DEMODULATOR
SCHEMATIC DIAGRAM
NO. 18-14 830534A
2C


VS-4
TO POWER SUPPLY & SYSCON PCB P10
EE12V
BS2
BS1
MUTE
VT
AFT
VF
GND
P41
IC1 TA7607AP
IC2 μPC1391H
U-AGC
VR1 5kB
Q1 2SC388A
Q2 2SC2603
Q3 2SC2603
Q4 2SC2603
Q5 2SC1210
Q6 2SA1115
Q7 2SC2603
Q8 2SA1115
Q9 2SC2603
Q10 2SC2603
Q11 2SC2603
Q13 2SC2603
CF1 SAF 39.5MHz
CF2 TPS6.0MD
CF3 SFE 6.0MB
CF4 CDA6.0MC19
IF AGC
AUDIO OUTPUT LEVEL
VR4 10kB
VIDEO OUT
GND
VIDEO J
AUDIO OUT
GND
P42
TO VIDEO PCB P18
TO VIDEO PCB P19
UB
TU
AGC
AFT
MB
IF
UHF ANT
TR1 3SK88
TR2 2SC2736
TR3 2SC2734
TR4 2SC2735
TR5 2SC2735
TP1
TP2
TP3
IFT
PC LEVEL
TV TUNER
TUNER ADAPTOR
ANT IN
VTR TU
ANT OUT
TR1 2SC3037
TR2,3 2SC3037
TR4 2SC3037
TR5 2SC3037
TR6 2SC2734
TO POWER & SYSCON PCB P9
P43
GND
IDL 12V
P44
TO VIDEO PCB P20
VIDEO IN
AUDIO IN
AL12V
TO SERVO PCB P24
PRE AMP
AUDIO AMP
VIDEO BUFF & CLAMP
BIAS CONT
AUDIO OSC & MOD
REG
RF MODULATOR
2SC1210
2SC3037
2SC388A
2SA1115
2SC2603
2SC2734
2SC2735
2SC2736
3SK88
B C E
B E C
E C B
D G S
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

VS-4EK
DEMODULATOR
SCHEMATIC DIAGRAM
NO.18-15 830535A

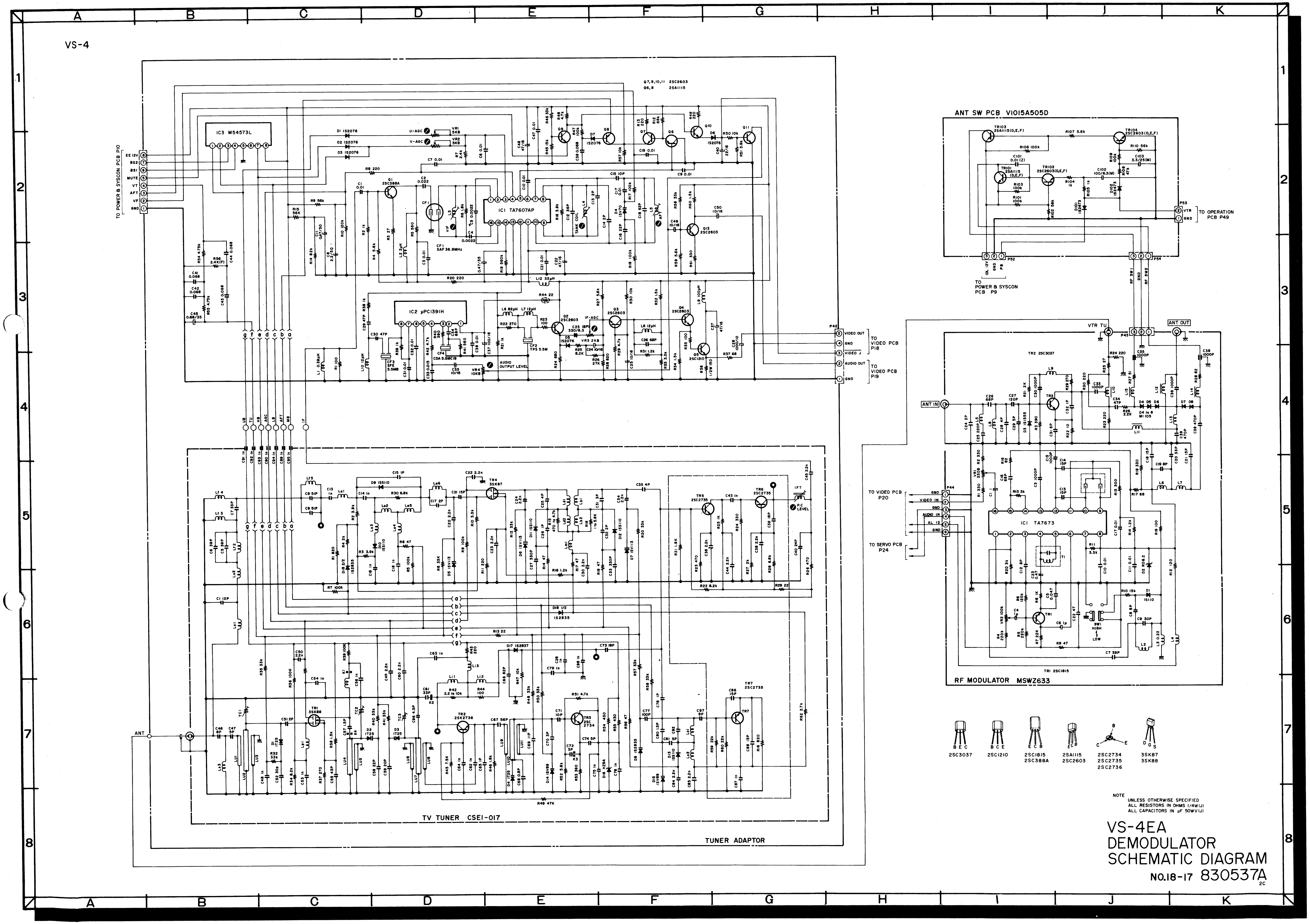

VS-4
IC3 M54573L
IC1 TA7607AP
IC2 µPC1391H
POWER SUPPLY & SYSCON PCB P10
P41
EE 12V
BS2
BS1
MUTE
VT
AFT
VT
GND
U-AGC
V-AGC
VR1 B-5k
VR2 B-5k
TR7,10,11 2SC2603
TR9 2SC2603
TR8 2SA1115
TR6 2SA1115
TR1 2SC388A
TR13 2SC2603
TR12 2SA1115
TR2 to 4 2SC2603
TR5 2SC1210
TANK COIL
IF AGC
AUDIO OUTPUT LEVEL
VIDEO OUT
GND
VIDEO J
VIDEO PCB P18
AUDIO OUT
GND
VIDEO PCB P19
P42
UB
TU
HB
AGC
LB
BB
IF
ANT
TP1
TP2
TP3
TP4
TR4 3SK81
TR5 2SC2735
TR6 2SC2735
TR1 3SK88
TR2 2SC2736
TR3 2SC2734
TR7 2SC2735
PC LEVEL
ANT IN
ANT OUT
VTR TU
TR1 2SC3037
TR4 2SC3037
TR2,3 2SC3037
POWER SUPPLY & SYSCON PCB P9
P43
GND
GND
IOL 12V
VIDEO PCB P20
SERVO PCB P24
GND
VIDEO IN
GND
AUDIO IN
AL 12V
GND
P44
IC1 BA7003
PRE EMP
AUDIO AMP
VIDEO BUFF & CLAMP
BIAS
AUDIO OSC & MOD
REG
TR5 2SC3037
TR6 2SC2734
2SC3037
2SC1210
2SC388A
2SA1115
2SC2603
2SC2734
2SC2735
2SC2736
3SK88
B E C
E C B
D G S
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50 WV (J)

VS-4 EO
DEMODULATOR
SCHEMATIC DIAGRAM

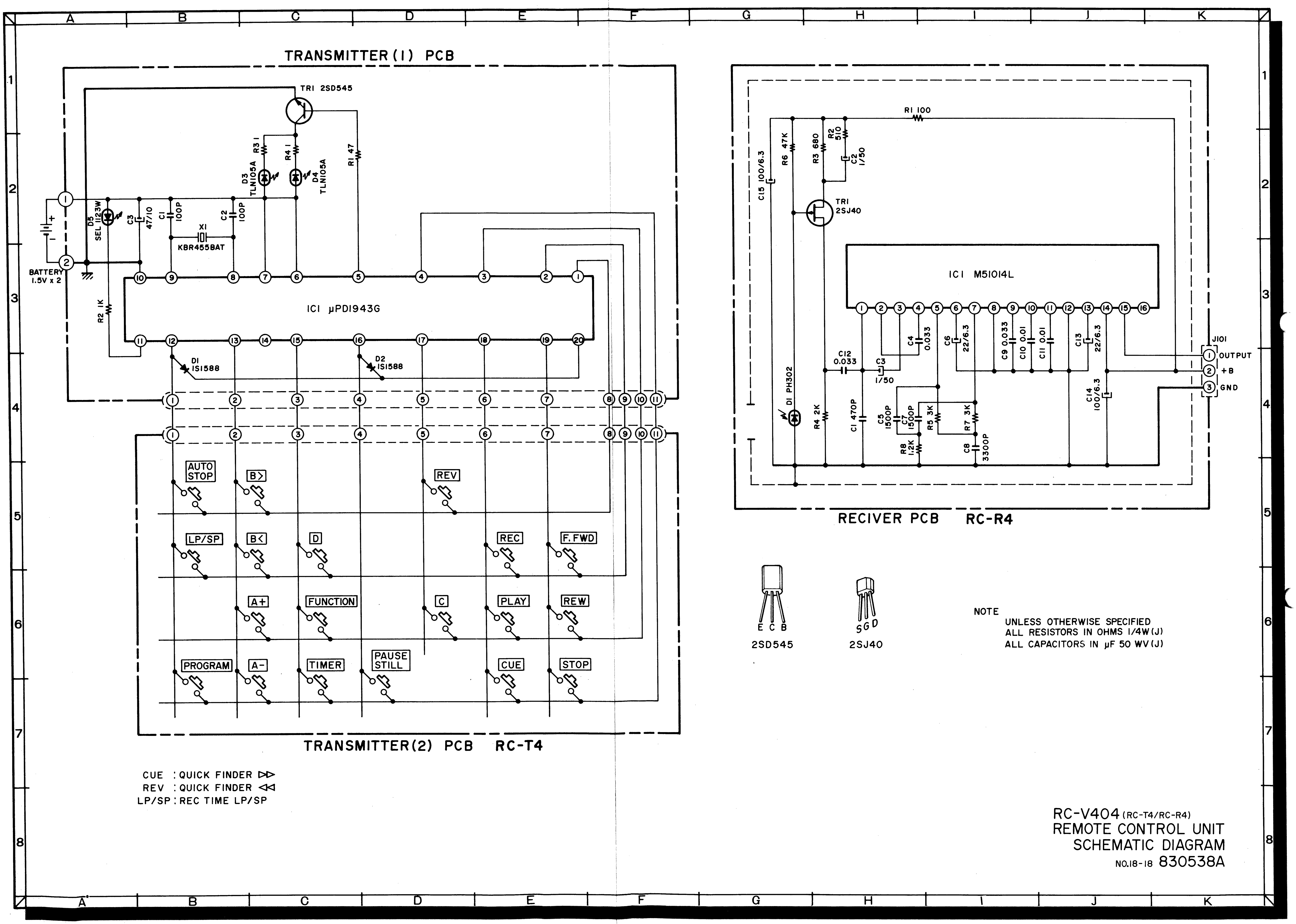
NO.18-16 830536A
2C

VS-4


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TO POWER & SYSCON PCB P10
EE 12V
BS2
BS1
MUTE
VT
AFT
VF
GND
IC3 M54573L
D1 1S2076
D2 1S2076
D3 1S2076
U-AGC
V-AGC
VR1 5KB
VR2 5KB
Q7,9,10,11 2SC2603
Q6,8 2SA1115
IC1 TA7607AP
CF1 SAF 36.9MHz
Q1 2SC388A
TANK COIL
AFT
Q13 2SC2603
IC2 μPC1391H
CF4 CDA 5.5MC19
CF3 SFE 5.5MB
CF2 TPS 5.5M
AUDIO OUTPUT LEVEL
Q2 2SC2603
IF-AGC
Q3 2SC2603
Q4 2SC2603
Q5 2SC1210
P42
VIDEO OUT
GND
VIDEO J
AUDIO OUT
GND
TO VIDEO PCB P18
TO VIDEO PCB P19
UB
TU
MB
AGC
LB
AFT
VB
IF
TR4 3SK87
TR5 2SC2735
TR6 2SC2735
IFT
P.C LEVEL
TR1 3SK88
TR2 2SK2736
TR3 2SC2734
TR7 2SC2735
ANT
TV TUNER CSE1-017
TUNER ADAPTOR
ANT SW PCB V1015A505D
TR103 2SA1115(D,E,F)
TR104 2SC2603(D,E,F)
TR101 2SA1115 (D,E,F)
TR102 2SC2603(D,E,F)
P53
VTR
GND
TO OPERATION PCB P49
P32
P54
TO POWER & SYSCON PCB P9
RF SW1
GND
RF SW2
VTR TU
P43
ANT OUT
TR2 2SC3037
ANT IN
TO VIDEO PCB P20
GND
VIDEO IN
GND
AUDIO IN
AL 12
GND
P44
TO SERVO PCB P24
IC1 TA7673
T1
TR1
SW1 HIGH LOW
TR1 2SC1815
RF MODULATOR MSWZ633
2SC3037
2SC1210
2SC1815
2SC388A
2SA1115
2SC2603
2SC2734
2SC2735
2SC2736
3SK87
3SK88
B E C
B C E
E C B
E C B
D G S

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

VS-4EA
DEMODULATOR
SCHEMATIC DIAGRAM
NO.18-17 830537A
2C


TRANSMITTER (1) PCB
TR1 2SD545
R3 1
R4 1
D3 TLN105A
D4 TLN105A
R1 47
D5 SEL 1123W
C3 47/10
C1 100P
C2 100P
X1 KBR455BAT
BATTERY 1.5V x 2
R2 1K
IC1 µPD1943G
D1 1S1588
D2 1S1588
AUTO STOP
B>
REV
LP/SP
B<
D
REC
F.FWD
A+
FUNCTION
C
PLAY
REW
PROGRAM
A−
TIMER
PAUSE STILL
CUE
STOP
TRANSMITTER (2) PCB RC-T4
R1 100
C15 100/6.3
R6 47K
R3 680
R2 510
C2 1/50
TR1 2SJ40
IC1 M51014L
C12 0.033
C3 1/50
C4 0.033
C6 22/6.3
C9 0.033
C10 0.01
C11 0.01
C13 22/6.3
C14 100/6.3
J101
OUTPUT
+B
GND
D1 PH302
R4 2K
C1 470P
C5 1500P
C7 1500P
R5 3K
R7 3K
R8 1.2K
C8 3300P
RECIVER PCB RC-R4
E C B
2SD545
S G D
2SJ40
A B C D E F G H I J K
1 2 3 4 5 6 7 8

CUE : QUICK FINDER ▷▷
REV : QUICK FINDER ◁◁
LP/SP : REC TIME LP/SP

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50 WV (J)

RC-V404 (RC-T4/RC-R4)
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.18-18 830538A